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LETTER FROM THE EDITORS

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UNOBSERVABLE PARAMETERS AND CONDITIONAL ESTIMATES OF INTERNAL RATE OF RETURN

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ABSTRACT

The conditional estimate of internal rate of return (CIRR) is intended to address several conceptual problems of the accounting rate of return (ARR). Nevertheless, researchers have raised concerns about the need to use an assumed project life and cash flow profile to calculate CIRR. The inability to directly measure IRR has prevented researchers from determining the impact of erroneous assumptions about firms' project lives and cash flow profiles. The current study addresses this gap in the research literature by using simulation techniques to observe the IRRs, project lives, and true cash flow profiles for a sample of firms.

By simulating the results of operations for a sample of firms, observations of the IRR, life of the composite project, and cash flow parameter were obtained to support a detailed evaluation of CIRR. The results of the current study indicate that assuming incorrect cash flow profiles affects the error with which CIRR estimates IRR. Moreover, the nature of the effect does not appear to be consistent with expectations. The results also indicate that assuming incorrect values for the life of the firm's composite project will affect the estimation error in CIRR. The impact of erroneous assumed project lives appears to be more pronounced when CIRR is estimated for shorter sample periods. Growth did not significantly influence the estimation error in CIRR for the sample of simulated firms.

The results of the current study support prior research, which suggests that sensitivity analyses may not fully compensate for the use of assumed values for unobservable parameters. Additional research is needed to identify techniques that will allow decision makers to more accurately determine the parameters needed to calculate CIRR. Also, more information is needed about the unique characteristics of the firm and its economic environment that can increase the error with which CIRR estimates IRR.

INTRODUCTION

Even though evaluating the past investment decisions of commercial entities is critical to the success of investors, creditors, government agencies, and managers, identifying an appropriate measure upon which to base the evaluation remains difficult in several important contexts. The internal rate of return (*IRR*) generated by the firm's portfolio of investments represents the theoretical ideal for some *ex post* performance evaluations, but this measure is unobservable in most cases. The firm's stock return has limited usefulness as a substitute for *IRR* because it is not well suited to evaluating long-term profitability and asset returns (Schwert 1981). Moreover, those interested in evaluating privately held firms and sub-units of publicly held firms will not have access to stock returns. Often the only means by which investment performance may be assessed is through the use of profitability measures based on the firm's external accounting reports.

Those who use accounting-based measures of profitability face a difficult choice. The most widely discussed and best understood profitability measure, the accounting rate of return (*ARR*), is relatively easy to calculate, but analytical research indicates that it exhibits sensitivity to accounting valuation bases and allocation methods, inflation, cash flow patterns, real growth rates, and length of asset lives in some models. (The literature investigating the relationship between *ARR* and *IRR* includes contributions by Harcourt (1965), Solomon (1966), Livingstone and Salamon (1970), Stauffer (1971), van Breda (1981), Fisher and McGowan (1983), and others. Jensen (1986) and Luckett (1984) provide reviews of this literature.) The conditional estimate of internal rate of return (*CIRR*), a profitability measure developed more recently by Salamon (1982 and 1985), addresses some of the *ARR*'s conceptual deficiencies by incorporating several of these factors. Building on the work of Ijiri (1978, 1979 and 1980), Salamon modeled the firm's *IRR* as a function of inflation, investment growth rate, life of the firm's composite project, the firm's cash recovery rate (*CRR*), and the cash flow profile of the firm's composite project. Nevertheless, researchers have expressed concern about the *CIRR*'s reliance on assumptions of a fixed real investment growth rate (Brief, 1985; and Stark 1989), an assumed constant cash flow profile (Brief, 1985; and Griner and Stark, 1991), assumed project lives (Brief, 1985; and Hubbard and Jensen, 1991), and a definition of cash from operations based on working capital (Lee and Stark, 1987; and Griner and Stark, 1988). In short, the *CIRR* possesses greater construct validity than *ARR* as an estimate of *IRR*, but several practical difficulties, especially the need to assume a project life and cash flow profile, have prevented it from being adopted as an unqualified successor to the *ARR*.

The inherent limitations of research approaches used to date have prevented researchers from being able to determine whether erroneous assumptions about project lives and cash flow profiles result in significant measurement error in the observed value of *CIRR*. The extant analytical research has greatly increased our understanding of the relationships between *CIRR* and *IRR*, including the manner in which systematic and random error can affect *CIRR*. However, analytical models do not generally include sufficient information about the magnitudes of the variables involved to support inferences about the practical or statistical significance of identified sources of error. Empirical studies have investigated the relationships suggested by analytical research, but because *IRR* is not observable, the findings generally are based on an indirect empirical approach. Researchers using an indirect empirical approach have tried to draw inferences about the relationship between accounting-based profitability measures and *IRR*, based on the relationship between accounting-based profitability measures and variables believed to be related to *IRR* (e.g., Griner and Stark, 1991; and Fritsche and Dugan, 1996). Neither the analytical approach nor the indirect empirical approach has combined the ability to provide empirical evidence with a direct analysis of the relationship between accounting-based profitability measures and *IRR*.

The purpose of the current study is to address this gap in the extant literature by assessing the practical impact of using assumed values in the computation of *CIRR*. Computer simulation is used to construct an environment in which the actual *IRR*s, project lives, and cash flow profiles of a sample of simulated firms can be measured and compared to the conventional estimates or assumed values of these variables. This approach overcomes the inherent limitations of the previous research approaches described above. The use of simulation allows an analysis of the relationship between the error with which *CIRR* estimates *IRR* and the errors in the assumed values for the firm's project life and cash flow profile. As such, it represents a worthwhile compromise between the analytical and indirect empirical approaches used in previous research.

The description of the current study is presented as follows. In the next section, the computer simulation is described in detail. Thereafter, the third section describes the variables used and the hypotheses tested. The fourth section sets out the research hypotheses. In the fifth section, the statistical tests and results are presented. The paper concludes with a summary.

SIMULATION METHODOLOGY

The data used in this study are based on the financial statement information of simulated firms. A Monte Carlo technique simulated the operations of a sample of firms for a total of 47 periods. During each of the periods, the simulated firms engaged in the activities typical of real firms. These activities included selling products, acquiring inventory, incurring operating expenses, arranging financing (by borrowing), and investing in long-term assets. The characteristics of the simulation are described below in sections devoted to exogenous economic factors, general financial and operating characteristics, and research design factors.

Although every effort was made in the simulation process to capture the essential characteristics of real firms and the environments in which they operate, the results of the current study must be considered similar in some respects to those of laboratory experiments. Greater control over experimental variables and the improvements in measurement precision were obtained by limiting the ability to draw inferences about actual firms based on the results of the current study (Kerlinger, 1980; and Rivett, 1980). This scenario reflects the classic trade-off between internal validity and external validity inherent in such situations.

Exogenous Economic Factors

Three features of the economic environment were determined exogenously because the processes needed to generate them are too complex to incorporate into the simulation program. First, the simulation program used United States Gross Domestic Product Implicit Price Deflators from 1949 through 1995 to represent inflation in the simulated environment. These inflation rates affected selling prices, input prices, operating costs, and the cost of plant asset purchases. Second, the complexity of simulating the market processes needed to derive changes in product demand resulted in the need to establish expected growth rates for product demand exogenously. Each firm was simulated using three different expected growth rates for quantity of products demanded: –5%, 0%, and +5%. These growth rates also affected operating costs and the real cost of plant asset purchases. Finally, the interest rates used to determine the cost of debt were the bank prime loan rates on short-term business loans as reported by the Federal Reserve Bank in St. Louis from 1949 through 1995.

General Financial and Operating Characteristics

As is the case for real firms, each simulated firm sold the lesser of two amounts of goods during each operating period: the quantity of goods demanded or the quantity of goods available for sale. As mentioned earlier, each firm was simulated under three different expected growth rates. In addition, the quantity of goods demanded in a given period was selected from a uniform distribution that ranged from ten percent above to ten percent below its expected value.

The quantity of inventory available in the current period was a function of the firm's investment in plant assets and the true shape of the cash flow profile generated by that investment. Each firm was simulated using an increasing, level, and decreasing series of expected values for the output produced by each period's investment in plant assets over the life of that investment. When the firm's investments produced increasing expected values of output, the investment made in a given period produced output at 25 percent below the median expected value of output in the first year of the investment's life. The expected value of the investment's output increased by a uniform amount each period until, in the last year of the investment's life, it produced output at 25 percent above the median expected value of output. The reverse of this pattern occurred in the case of a firm whose investments produced decreasing expected values of output. The resultant cash inflows from the sale of the firm's output created increasing, level, and decreasing cash flow profiles for its investments.

Industry average data from Robert Morris Associates (1995) defined the initial financial position and operating characteristics of each firm. The initial composition of each firm's balance sheet resulted from selecting an arbitrary value for total assets (1,000 currency units) and applying the percentages from the composite balance sheet data for the industry to this total. For manufacturing industries, the initial selling price per unit of output was 10 currency units, and applying 1 minus the composite gross margin percentage for the industry produced the initial cost per unit. Using median values of financial statement ratios for the industry, the simulation determined the following operating characteristics: (1) the percentage of inventory purchases paid within the year of purchase, (2) the percentage of sales revenues collected in the year of sale, (3) the percentage of operating and interest expenses paid within the year incurred, (4) the percentage of long-term debt maturing in the following period, (5) the percentage of total assets maintained in the form of cash, and (6) the average depreciable life of plant and equipment. Tables 1 and 2 describe the determination of operating characteristics in greater detail. Each firm's accounts were updated to reflect each period's transactions in accordance with basic double-entry accounting procedures.

The industry averages used to create the simulated firms were taken from the two-digit SIC classifications used by Salamon (1988). This approach produced a sample of 167 sets of industry averages for four-digit SIC classifications within the two-digit classifications. Using firms with Salamon's industry groups should facilitate comparison of the results of this study with those reported by Salamon, thereby allowing a clearer interpretation of both sets of results.

Analytical research investigating the relationship between accounting-based profitability measures and *IRR* has consistently identified the firm's depreciation method and inventory cost flow assumption as factors that may contribute to the observed differences between the two rates. Although *ex ante* there is less reason to expect accounting policy choices to affect *CIRR* than *ARR*, a choice concerning the inventory cost flow assumption and depreciation method had to be made for each firm in the sample. For this reason, each firm was simulated using both LIFO and FIFO inventory cost flow assumptions. To support extending the inferences drawn in the current study to those of previous research, each member industry of the two-digit SIC classes was randomly assigned to either the straight-line or sum-of-the-years'-digits groups, roughly in proportion to the observed usage patterns reported by Salamon (1988).

Table 1: Financial Statement Ratios Used in Computer Simulation	
Financial Statement Ratio	Label Used in Formulae
Cash & Equivalents / Total Assets * 100	A1
Trade Receivables--(net) / Total Assets * 100	A2
Total Current Assets / Total Assets * 100	A3
Notes Payable--Short-Term / Total Assets * 100	A4
Current Maturities of Long-Term Debt / Total Assets * 100	A5
Trade Payables / Total Assets * 100	A6
Total Current Liabilities / Total Assets * 100	A7
Net Worth / Total Assets * 100	A8
Gross Profit / Sales * 100	A9
Operating Expenses / Sales * 100	A10
Sales / Receivables	A12
Cost of Sales / Payables	A14
Sales / Total Assets	A16
Depreciation, Depletion, & Amortization / Sales * 100	A17

Table 2: Formulae Used to Calculate Simulation Parameters and Opening Balance Sheets for Simulated Firms	
Value Calculated	Formula
Cash	Total Assets * A1 / 100
Trade Receivables	Total Assets * A2 / 100
Inventory (Cost)	(Total Assets * A3 / 100) - Cash - Trade Receivables
Inventory (Units)	Inventory (Cost) / (Selling Price * (1 - (A9 / 100)))
Gross Fixed Assets	(Total Assets - Cash - Trade Receivables - Inventory (Cost)) * 2
Accumulated Depreciation	Gross Fixed Assets / 2
Fixed Asset Purchases (Year 0)	(A17 / 100) * (Total Assets * A16 / 100)
Short-Term Notes Payable	Total Assets * A4 / 100
Current Maturities of Long-Term Debt	Total Assets * A5 / 100
Trade Payables	Total Assets * A6 / 100
Accrued Liabilities	(Total Assets * A7 / 100) - Short-Term Notes Payable - Current Maturities of Long-Term Debt - Trade Payables
Stockholders' Equity	Total Assets * A8 / 100
Long-Term Debt	Total Assets - Short-Term Notes Payable - Current Maturities of Long-Term Debt - Trade Payables - Accrued Liabilities - Stockholders' Equity

Table 2: Formulae Used to Calculate Simulation Parameters and Opening Balance Sheets for Simulated Firms	
Value Calculated	Formula
Operating Expenses (Year 0)	(A10 / 100) * (Total Assets * A16 / 100)
Unit Cost of Inventory (Year 0)	Selling Price * (1 - (A9 / 100))
Expected Unit Demand (Year 0)	Total Assets * A16 / Selling Price
Portion of Purchases Paid for in Year of Purchase	1 - (1 / A14)
Portion of Sales Collected in Year of Sale	1 - (1 / A12)
Portion of Operating Expenses Paid for in Year of Incurrence	1 - (Accrued Liabilities / Operating Expenses (Year 0))
Portion of Long-Term Debt Maturing in Next Period	Current Maturities of Long-Term Debt / Long-Term Debt
Portion of Total Assets Maintained in the Form of Cash	Cash / Total Assets

Finally, to assess the sensitivity of the results to the length of the estimation period used to calculate variables, three different estimation periods were used: 5, 10, and 15 periods. These estimation periods were based on the last 5, 10, and 15 periods of the 47 periods simulated for each firm. This approach left a "warm-up" phase of at least 32 operating periods. The "warm-up" phase allowed the simulated firm's operating and financial results to stabilize before data accumulation began. As a result of the factors discussed above, the sample for each of the three estimation periods (5, 10, and 15 periods) contains a maximum of 3,006 observations. This number results from the following: 167 sets of industry averages x 2 inventory cost flow assumptions (FIFO and LIFO) x 3 expected growth rates (-.05, 0.0, and .05) x 3 actual cash flow profiles.

VARIABLE DEFINITIONS

A substantial amount of research has contributed to the development and testing of *CIRR*. This profitability measure is a complex elaboration of a capital budgeting tool developed by Ijiri (1978, 1979 and 1980). Ijiri suggested the use of a cash recovery rate (*CRR*) to measure investment performance. His cash recovery rate was based on the reciprocal of the traditional payback period. Ijiri demonstrated that under certain steady state conditions, the *CRR* was related to a return measure that converged to the firm's *IRR*. Although Ijiri's definition of *CRR* was based on working capital, Lee and Stark (1987) and Griner and Stark (1988) suggested that a cash flow definition is more consistent with the capital budgeting environment from which *CRR* developed. Thus, the current study defines *CRR* in the following way:

$$CRR_{it} = NOCF_{it} / GPA_{it}, \quad (1)$$

where *NOCF* is net operating cash flows before interest and taxes, and *GPA* is the average accounting value (cost) of plant assets during the period.

Salamon (1982) extended Ijiri's work to develop a more complete representation of the relationship between *CRR* and an estimate of the firm's real internal rate of return that Salamon described as *cirr*. The relationship derived by Salamon (1982) is as follows:

$$CRR = [(1 - pg)p^n g^n / 1 - p^n g^n] \bullet [g^n - b^n / g^n(g - b)] \bullet [r^n(r - b) / r^n - b^n], \quad (2)$$

where r is 1 plus *cirr*, p is 1 plus the inflation rate, g is 1 plus the growth rate in investment (gross assets), n is the useful life of the firm's composite project, and b is an assumed cash flow parameter.

Several features of Salamon's model require additional comment. First, because (2) explicitly incorporates price level changes, the resulting *cirr* is a conditional estimate of the firm's *real* internal rate of return.

Second, growth rate in investment is defined as the logarithm of the ratio of the price level adjusted amount of gross plant assets at the end of the estimation period divided by the price level adjusted amount of gross plant assets at the beginning of the estimation period. This definition also was used by Salamon (1982, 1985 and 1988) and Griner and Stark (1988).

Third, the current study calculated the life of the firm's composite project, n, by first dividing gross property, plant, and equipment by depreciation expense for each year included in the estimation period. The average of those annual estimates was used as the value of n when the firm's depreciation expense was determined using the straight-line method. When the simulated firms used the sum-of-the-years'-digits depreciation method, n was calculated using the sum-of-the-years'-digits approach suggested by Buijink and Jegers (1989).

Finally, the calculation of *cirr* is conditioned on the assumed value of b, the cash flow parameter. If b is greater than 1, the cash flows of the firm's composite project increase over its life, if b is less than 1, the cash flows of the firm's composite project decrease over its life, and if b equals 1, the cash flows remain level. The current study calculated three different values of *cirr*, each based on one of three different values for b. Table 3 indicates the values used for b and the label assigned to the resulting values of *cirr*. (Salamon (1988) also included a definition of *cirr* that used a value of .8 for b when the firm used an accelerated depreciation method and a value of 1.0 when the firm used the straight-line depreciation method. Because growth and depreciation method combinations were exogenously determined, this formulation would not have a meaningful interpretation and is, therefore, not included.)

Table 3: Values Used for *b* to Compute Alternative Formulations of *cirr*

Values Used for b	Label Used for cirr
.8	$cirr_1$
1.0	$cirr_2$
1.2	$cirr_3$

As a basis for measuring the error with which *cirr* estimates *irr*, the current study employed a direct calculation of each firm's real internal rate of return, *irr*, for the sample periods examined. To aid in the presentation of the research hypotheses later in the paper, the label used for this variable will be *roi*. The definition requires that the firm's cumulative investment in assets, *CUMINV*, at the beginning and end of the

time interval be known and that the values of this variable be expressed in real magnitudes. The current study defines *CUMINV* as follows:

$$CUMINV_{it} = CUMINV_{it\text{-}1} + [GPA^{+}_{it} / \Pi^{t}_{j=1} (1 + \rho_j)] - [GPA^{-}_{it\text{-}n} / \Pi^{t\text{-}n}_{j} = 1\ (1 + \rho_j)] = CUMINV_{it\text{-}1} + gpa^{+}_{it} - gpa^{-}_{it}, \quad (3)$$

where gpa^{-} is the decrease in gross plant assets in the current period, discounted to time 0 dollars, and gpa^{+} is the increase in gross plant assets in the current period, discounted to time 0 dollars. The simulation did not incorporate the market processes necessary to accommodate disposal of plant assets by sale. Therefore, the cost of plant assets and the related accumulated depreciation were removed from the firm's accounts at the end of the assets' lives. This approach to plant asset disposals is equivalent to the treatment given to assets that have been discarded. Values of *CUMINV* at the beginning and end of the sample periods in the study are used as beginning and ending economic values of the firm's composite project. Put another way, the definition of real *IRR*, labeled *roi*, used in the current study relies on the assumed correspondence of the cumulative investment in the firm's assets, discounted to time 0 dollars, to a market valuation, in real magnitudes, of those same assets. The formula used to calculate *roi* is as follows:

$$0 = CUMINV_{i0} - [\Sigma^{n*}_{t=1} [NOCF_{it} - GPA^{+}_{it} / \Pi^{t}_{j=1}(1 + \rho_j)] / (1 + roi_i)^t] + CUMINV_{in*} / (1 + roi_i)^t, \quad (4)$$

In this formula, *roi* is calculated through an iterative process that terminates when a net present value of 0 is reached.

The formula used to calculate *roi* reflects the premise that most parties interested in evaluating the performance of a firm will be interested in a finite time interval, rather than the firm's entire life. This premise is based on the impossibility of calculating profit rates for corporate entities with indefinite lives and the finite time horizons used by investors and other interested parties.

Having defined the necessary variables, the research questions addressed by the current study may be described. In the next section, these questions are expressed in the form of hypotheses that can be tested empirically.

HYPOTHESES

Before investigating the impact that imprecise estimates of unobservable parameters have on the error with which *CIRR* estimates *IRR*, it seemed appropriate to determine whether the total estimation error is significant. For this reason, the current study began by evaluating the significance of the percentage deviation of *CIRR* from *IRR* for the sample of simulated firms. Using percentage errors as the variable of interest avoids the impact of large values, while maintaining the possibility of a measure of central tendency with a value of zero. Let *PE* be defined as

$$PE_{it} = (cirr_{it} - roi_{it}) / roi_{it}, \quad (5)$$

where *cirr* and *roi* are as defined above in (2) and (6), respectively. If M_{PE} is defined as the median value of *PE*, the first set of hypotheses can then be expressed as follows:

$$H_o1: \ M_{PE} = 0$$
$$H_a1: \ M_{PE} \neq 0$$

By using median values of *PE*, the current study addresses this issue while avoiding questions about the normality of the variables' distributions and also provides a more conservative (less powerful) test for the existence of a difference.

Next, the current study addressed the question of whether an incorrect assumption about the firm's cash flow profile contributes significantly to the error with which *CIRR* estimates *IRR*. Several authors have expressed concern about the need to use assumed cash flow profiles when calculating *CIRR* (Brief, 1985; and Griner and Stark, 1991). Indeed, Salamon (1985 and 1988) acknowledged this limitation of *CIRR*, and, like other researchers, employed several assumed cash flow parameters to assess their impact on the outcomes of empirical research that relied on *CIRR*. Sensitivity analyses like those reported by Salamon and the results of Gordon and Hamer (1988) indicated that a strong association exists between alternative formulations of *CIRR*. As a result, *CIRR*s based on different assumed cash flow parameters will generally yield the same ranking of firms. However, Griner and Stark (1991) provided analytical evidence that use of an incorrect cash flow parameter will produce a *CIRR* containing error that is related to the firm's investment growth rate. Moreover, the research reported by Stark, Thomas and Watson (1992) suggests that this systematic error will undermine the usefulness of *CIRR* in important practical applications. Thus, it appears on the basis of prior analytical research that a need exists for evidence of the magnitude of errors introduced by incorrect assumptions about the firm's cash flow profile. Let M_{jk} represent the median *PE* contained in a simulated firm's *cirr* when the firm's composite project is producing an actual cash flow profile j and *cirr*'s calculation is based on an assumed cash flow profile k. If both j and k assume values indicating decreasing, level, or increasing cash flow profiles, then the second set of hypotheses may be expressed as follows:

$$H_o2: \ M_{11} = M_{12} = M_{13} = M_{21} = \ldots = M_{33}$$
$$H_a2: \text{ At least one median is significantly different from the others.}$$

This global test for significant differences in impact of assumed cash flow profiles given the actual profile indicates whether or not pairwise comparisons of the individual medians are warranted.

Finally, the computation of *CIRR* depends on two other variables that must be assumed or estimated from published data. Several authors have identified growth as a potential source of bias in *CIRR*. Additionally, both growth and the life of the firm's composite project must be assumed or estimated from published data. As a means of assessing the incremental estimation error introduced by incorrect assumed cash flow profiles, the current study considered the following multivariate model:

$$PE_{it} = \beta_0 + \beta_1 TCFP_{it} + \beta_2 g_{it} + \beta_3 PEN_{it} + \epsilon_{it}, \qquad (6)$$

where *TCFP* is a categorical variable indicating whether the firm's true cash flow profile is decreasing, level, or increasing; *g* represents the firm's expected growth rate (.05, 0.0, or -.05); and PE^N is the percentage error

with which *n* estimates the true life of the firm's composite project. This model forms the basis for the third set of hypotheses:

$$H_o3: b_1 = b_2 = b_3 = 0$$
$$H_a3: \text{At least one coefficient is significantly different from 0.}$$

Some researchers, including Griner and Stark (1991), have presented analytical models indicating that the estimation error in *CIRR* is a multiplicative function of firm's cash flow profile and growth rate. Nevertheless, the current study uses the simple linear model in (8) because it allows a straightforward interpretation. Also, standard techniques exist to determine whether model misspecification is a significant concern.

The hypotheses described address concerns about the total error with which *CIRR* estimates *IRR*, the impact of using an incorrect cash flow profile when calculating *CIRR*, and the incremental contribution of incorrect cash flow profiles to the estimation error in *CIRR*. The next section describes the techniques used to test these hypotheses and the results of those tests.

RESULTS

Before describing the results of the hypothesis tests, it may be helpful to point out an inherent problem associated with calculating *cirr* using (2) above. The calculated value of *cirr* is the result of an iterative process that involves substituting successive values for *r* in the equation and determining the closeness of the result to the observed value of *CRR*. When the result has converged on the observed value of *CRR*, defined as equality to six decimal places in the current study, the iterative process stops. In a limited number of cases, convergence could not be achieved. Table 4 indicates the sample sizes for the various combinations of assumed and actual cash flow profiles.

The first set of hypotheses concerned the percentage error with which *CIRR* estimates *IRR*. The Wilcoxon Signed Ranks Test (Gibbons, 1985) was used to determine whether or not the median percentage error was significantly different from zero. Table 5 summarizes the results of these tests. Regardless of the length of the sample period or the cash flow profile assumed, the null hypothesis was rejected at p £ .0001.

Table 4: Sample Mortality

Actual Project Cash Flow Pattern	Assumed Project Cash Flow Pattern		
	Decreasing	Level	Increasing
Five-Year Sample Period			
Decreasing	1,000	1,000	1,000
Level	1,002	1,002	1,002
Increasing	1,002	1,002	1,002

Table 4: Sample Mortality			
Actual Project Cash Flow Pattern	Assumed Project Cash Flow Pattern		
	Decreasing	Level	Increasing
Ten-Year Sample Period			
Decreasing	1,000	1,000	1,000
Level	1,002	1,002	1,002
Increasing	1,002	1,002	1,002
Fifteen-Year Sample Period			
Decreasing	998	998	998
Level	998	998	998
Increasing	998	998	998
Note: In the absence of mortality, there would be 1,002 observations per cell.			

Table 5: Wilcoxon Signed Ranks Test of H_o1: $M_{PE} = 0$			
Actual Project Cash Flow Profile	Assumed Project Cash Flow Profile		
	Decreasing	Level	Increasing
Five-Year Sample Period			
Decreasing	180,199	134,397.5	138,657.5
	(1,000)	(1,000)	(1,000)
Level	150,320.5	100,761.5	110,775.5
	(1,002)	(1,002)	(1,002)
Increasing	10,236	-23,352.5	39,491.5
	(1,002)	(1,002)	(1,002)
Ten-Year Sample Period			
Decreasing	143,388	131,328.5	140,983.5
	(1,000)	(1,000)	(1,000)
Level	138,291	123,758.5	136,202.5
	(1,002)	(1,002)	(1,002)
Increasing	112,911.5	109,686.5	131,762.5
	(1,002)	(1,002)	(1,002)

Table 5: Wilcoxon Signed Ranks Test of H_o1: $M_{PE} = 0$			
Actual Project Cash Flow Profile	Assumed Project Cash Flow Profile		
	Decreasing	Level	Increasing
Fifteen-Year Sample Period			
Decreasing	124,368.5	154,639.5	165.945.5
	(998)	(998)	(998)
Level	129,363.5	153,223.5	166,301.5
	(998)	(998)	(998)
Increasing	129,045.5	139,555	146,199.5
	(998)	(998)	(998)

Note: The first row reports the Wilcoxon *S* statistic, and the second row reports the number of observations. All *S* statistics are significant at $p \leq .0001$.

The impact of assuming an incorrect cash flow parameter when calculating *CIRR* is the issue addressed by the second set of hypotheses. Because each of the firms contributed an observation for each combination of assumed and actual cash flow profiles, the groups of observations are dependent. For this reason, the Friedman Test (Gibbons, 1985) was used to test the second null hypothesis. The Friedman Test is a nonparametric two-way analysis of variance. It accomplishes a test of medians for dependent samples by ranking the data within groups and treating the firm as the blocking factor. The results of the Friedman Tests are summarized in Table 6. The null hypothesis is rejected for all sample periods. In addition, the declining values of the *F*-statistic indicate that the impact of assuming an incorrect cash flow parameter decreases as the sample period lengthens.

Table 7 reports the results of pairwise Wilcoxon Signed Ranks Tests performed to further explore the results obtained from the Friedman Tests discussed above. All pairwise comparisons indicate a significant difference between the respective median percentage errors. Although it may seem reasonable to expect using an assumed cash flow profile that is consistent with the actual profile will generally produce a lower median percentage error, such a pattern is not evident in the results of the pairwise comparisons. For example, when the actual cash flow profile is level, one might expect that $cirr_2$, which is based on an assumption of a level cash flow profile, would estimate *IRR* with less error than either of the two alternative formulations. Similarly, it would be reasonable to expect $cirr_1$, which is based on the assumption of a decreasing cash profile, to contain less estimation error than the alternative formulations when the actual cash flow profile is decreasing. In fact, a consistent pattern emerges in which $cirr_1$ contains the highest measurement error and $cirr_3$ contains the lowest measurement error, regardless of the actual cash flow profile or length of sample period. Although the combination of actual and assumed cash flow profile influences the percentage error with which *CIRR* estimates *IRR*, the relationship between the combination and the amount of estimation error is not consistent with expectations.

Table 6: Friedman Tests of H_o2: $M_{11} = M_{12} = M_{13} = M_{21} = \ldots = M_{33}$			
Sample Period Length	Actual-Estimated Cash Flow Profile	Combination Model	Model R^2
5	329.44[c]	2.62[c]	.248
	(8, 8,002)	(1,009, 8,002)	
10	152.75[c]	1.22[c]	.133
	(8, 8,002)	(1,009, 8,002)	
15	123.46[c]	1.00	.113
	(8, 7,972)	(1,009, 7,972)	

Note: The first row of each cell containing *F* statistic information is the *F* statistic, and the second row of the same cells reports the numerator and denominator degrees of freedom.
[a] $p \leq .10$
[b] $p \leq .05$
[c] $p \leq .01$

The third set of hypotheses concerned the impact of assuming an incorrect cash flow profile on the estimation error in *CIRR* while controlling for growth and the percentage error in estimated life of the firm's composite project. Parametric repeated measures ANCOVA analyses were used to test the third null hypothesis for two reasons. First, the dependent variable for the model, *cirr*, included three observations for each of the simulated firms. By adopting a repeated measures approach, the dependency in these observations could be exploited to reduce experiment-wide error. (Wilkes Lambda tests of overall significance of the repeated factor (firm) indicated that the repeated factor was significant in all models for the ten- and fifteen-year sample periods. Such was not the case for the five-year sample period.) Second, parametric ANCOVA techniques are more accessible than their non-parametric alternatives. Moreover, given the size of the sample, the distribution of the errors in the model was judged to be of limited grounds for concern. Table 8 presents the results of the ANCOVA analyses.

Several important inferences can be drawn from the repeated measures ANCOVA results reported in Table 8. First, the firm's actual cash flow profile (*TCFP*) contributed significantly to the model's ability to explain the error with which *CIRR* estimated *IRR*, regardless of the sample period used. Additionally, the significance of actual cash flow profile appeared to be unaffected by the inclusion of growth or project life estimation error. This evidence of model stability provides limited assurance that any interactions among the explanatory variables may be of little significance. Second, estimation error in the life of the firm's composite project contributed significantly in the five- and ten-year sample periods. Finally, growth does not improve the ability to predict the estimation error in *CIRR* regardless of the length of the sample period. For the sample of simulated firms used in the current study, growth shows little relationship to the estimation error in *CIRR*.

Table 7: Wilcoxon Pairwise Comparisons of Percentage Errors

	First Variable Compared					
	Decreasing Actual Cash Flow Profile		Level Actual Cash Flow Profile		Increasing Actual Cash Flow Profile	
Second Variable Compared	$cirr_1$	$cirr_2$	$cirr_1$	$cirr_2$	$cirr_1$	$cirr_2$
Five-Year Sample Period						
$cirr_2$	150,187		143,678.5		123,902.5	
	(1,000)		(1,002)		(1,002)	
$cirr_3$	145,670	133,385	142,666.5	138,799.5	121,297.5	112,519.5
	(1,000)	(1,000)	(1,002)	(1,002)	(1,002)	(1,002)
Ten-Year Sample Period						
$cirr_2$	90,857		122,347.5		105,513.5	
	(1,000)		(1,002)		(1,002)	
$cirr_3$	87,151	78,361.5	120,626.5	114,271	101,385.5	87,517
	(1,000)	(1,000)	(1,002)	(1,002)	(1,002)	(1,002)
Fifteen-Year Sample Period						
$cirr_2$	62,821.5		132,856.5		142,439.5	
	(998)		(998)		(998)	
$cirr_3$	60,014.5	51.905.5	130.421.5	121,213.5	138,327.5	123,669
	(998)	(998)	(998)	(998)	(998)	(998)

Note: The first row reports the Wilcoxon *S* statistic, and the second row reports the number of observations. All *S* statistics are significant at $p \leq .0001$.

Table 8: Parametric Repeated Measures ANCOVA Models

$$PE_{it} = \beta_0 + \beta_1 TCFP_{it} + \beta_2 g_{it} + \beta_3 PE_{it}^{N} + \varepsilon_{it}$$

	b_1	b_2	b_3
Five-Year Sample Period			
Model 1	3.57[b]		
N = 3,004	(2, 3,001)		
Model 2	3.57[b]	1.88	6.84[c]
N = 3,004	(2, 2,999)	(1, 2,999)	(1, 2,999)

Table 8: Parametric Repeated Measures ANCOVA Models

$$PE_{it} = \beta_0 + \beta_1 TCFP_{it} + \beta_2 g_{it} + \beta_3 PE_{it}^{N} + \varepsilon_{it}$$

	b_1	b_2	b_3
Ten-Year Sample Period			
Model 1	3.98[b]		
N = 3,004	(2, 3,001)		
Model 2	3.98[b]	.53	4.32[b]
N = 3,004	(2, 2,999)	(1, 2,999)	(1, 2,999)
Fifteen-Year Sample Period			
Model 1	3.00[b]		
N = 2,994	(2, 2,991)		
Model 2	2.98[a]	2.13	0.00
N = 2, 994	(2, 2,989)	(1, 2,989)	(1, 2,989)

Notes: For each model, the first row reports the *F* statistic, and the second row reports the numerator and denominator degrees of freedom.
[a] $p \leq .10$
[b] $p \leq .05$
[c] $p \leq .01$

CONCLUSION

The *CIRR* provides decision makers with a profitability measure that addresses many of the identified weaknesses of the *ARR*. It incorporates growth, inflation, the life of the firm's composite project, and the shape of the firm's cash flow profile. Although its calculation is more difficult, the *CIRR*'s greater construct validity may allow it to supplant the *ARR* in contexts where a profitability measure based on accounting information is required.

Unfortunately for users of accounting-based profitability measures, the *CIRR* also has been criticized. Extant analytical models indicate that *CIRR* may estimate *IRR* with error, including systematic error related to growth, because of its reliance on an assumed value for the firm's cash flow profile. Moreover, *CIRR* relies on assumed values for another unobservable parameter, the life of the firm's composite project. The inherent limitations of research approaches used to investigate the properties of *CIRR* have prevented researchers from assessing the magnitude of the estimation error introduced by incorrect assumptions about these two unobservable parameters.

The current study employed a simulation model to overcome the limitations of previous research. By simulating the results of operations for a sample of firms, observations of the *IRR*, life of the composite project, and cash flow parameter were obtained to support a detailed evaluation of *CIRR*. The results of the current study indicate that assuming incorrect cash flow profiles affects the error with which *CIRR* estimates

IRR. Moreover, the nature of the effect does not appear to be consistent with expectations. The results also indicate that assuming incorrect values for the life of the firm's composite project will affect the estimation error in *CIRR*. The impact of erroneous assumed project lives appears to be more pronounced when *CIRR* is estimated for shorter sample periods. Growth did not significantly influence the estimation error in *CIRR* for the sample of simulated firms.

The results of the current study support prior research, which suggests that sensitivity analyses may not fully compensate for the use of assumed values for unobservable parameters. Additional research is needed to identify techniques that will allow decision makers to more accurately determine the parameters needed to calculate *CIRR*. Also, more information is needed about the unique characteristics of the firm and its economic environment that can increase the error with which *CIRR* estimates *IRR*.

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EXECUTIVE COMPENSATION SCHEMES IN THE BANKING INDUSTRY: A COMPARATIVE STUDY BETWEEN A DEVELOPED COUNTRY AND AN EMERGING ECONOMY

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ABSTRACT

This paper examined the level and structure of compensation schemes of directors (both executive and non executives) and other named officers in the banking industries of Canada and South Africa. We found a significant relationship between the CEO compensation and the market value of the firm. In addition the study examined the differences between the two countries, and the relationship between compensation schemes and the value of the firm. We found significant differences in the compensation structures and levels between the two countries.

INTRODUCTION

This paper examines the executive compensation schemes and practices of banks operating in Canada (a developed country) and South Africa (an emerging economy). In both countries a relatively small number of large banks dominate the national market, making the banking sector a unique research context and an interesting first step in the comparison of compensation paid in each country. Using a population of eight major publicly-traded banks in Canada and the four main banks in South Africa, we investigate the structure and level of executive compensation, defined as the sum of salary, annual bonus, the values of executive stock options and long term incentive plans (LTIPs). We discriminate between banks operating in Canada and those operating in South Africa and use contingency theory of management accounting to explain the differences.

The term developing countries has been defined in a variety of ways by different authors mainly based on: 1) geographical location and 2) economic development. For example, Perera (1989) defines developing countries as those countries in the so-called Third World. Third World refers to those countries that do not belong to the Western world centered in the U.S.A, or the Eastern world with the former USSR as a centre. Wallace (1990) defines developing countries as those in the mid-stream of development and refers to an amorphous and heterogeneous group of countries mostly found in Africa, Asia, Latin America, the Middle East and the Oceanic.

South Africa is identified to represent developing countries since although classified so by the United Nations (2001) and the World Bank (2000), it lies on the upper income bracket of such countries. South Africa falls between both a developed and a third world country making it a good subject for examining the way in which compensation schemes are used in a developing country. South Africa is a developing country

to the extent that it is an exporter of raw materials rather than finished goods; the economy is heavily tied to one raw material, namely gold. South Africa has accelerated its privatization program with up to $24 billion of government assets to be released for divestiture (ADB, 2000).

The paper proceeds as follows; Section 2 describes the study theoretical framework. Section 3 describes the data and the methodology. Section 4 presents the results while section 5 discusses the results and presents a conclusion of the study.

THEORETICAL FRAMEWORK

Agency theory predicts that performance measures used for incentive purposes determine the direction of effort by the agent and that the incentive weight determines the amount of effort provided by the agent. The conventional theoretical framework for understanding reward contracts is in agency theory (Lambert 2001). Consequently the use of incentive contracts will lead to higher effort levels and increased performance on those dimensions that are being measured (Moers and Peek, 2000). The main prediction of the agency model is that pay should be sensitive to firm performance in order to induce managers to exert effort and thereby align the interests of the shareholders and managers (Jensen and Meckling 1976; Widener 2006).

Agency theory focuses on the risk characteristics of the enterprise (including any information asymmetry issues) as prime determinants of the shape and nature of reward contracts (Stathopoulos et al 2004). Emerging economy stocks are the most risky firms in our study (due to information asymmetry) and the developed economy stocks are the least risky, and so we expect to see differences between the reward contracts of South African Banks and those of the Canadian banks in our study. We expect South African bank executives to prefer a higher proportion of their compensation in long term incentives since more risk would lead to higher option values (Black and Scholes, 1973).

A similar argument could be made based on Smith and Watts (1992) who argue that a firm's growth opportunities will have an impact on its executive compensation policy. They define growth opportunities as the ratio of book value of assets to firm value. We perceive a difference between growth opportunities in Canada and South Africa. Firms with higher growth opportunities are expected to offer more potential compensation to their managers. Firms with higher growth opportunities are also expected to offer more long term incentives than short term incentives (Bushman et al 1996). Higher possible levels of compensation are expected to motivate managers so that they can be able to exploit such future opportunities (Kato et al 2005).

Conyon and Murphy (2000) argue that the generally higher compensation of US CEOs has put pressure on CEOs in the UK, Europe and elsewhere. Globalization of the market for executives has made it necessary for firms to benchmark their compensation against international companies. Further the growing influence of the shareholder value movement, has led to a greater focus on performance related compensation mechanisms, such as executive stock options. More recently, pressure on institutional investors such as unit trusts and insurance companies has increased the focus on financial performance and on executive packages (Stathopoulos et al 2004).

In some respects, Canada is to the US what South Africa is to the UK. For example, Canada is a smaller economy under the influence of the US and both countries share a history of close commercial ties. The same is true for South Africa and the UK. It is thus of interest to review prior research comparing US and UK. There are many similarities between the UK and the US in terms of their institutional framework and

the functioning of their capital and managerial labor markets. However, recent studies of compensation practices in the US and UK have yielded varying results. For example Ittner et al (2003) and Murphy (2003), report that equity-based pay is more prevalent among New Economy companies. Conyon and Murphy (2000) found substantial differences in pay practices, particularly in terms of a significantly greater use of stock options in the US *than* in the UK.

Contingency theory provides an explanation of why accounting systems vary between firms operating in different countries (Otley, 1980; Innes and Mitchell, 1990; Chapman, 1997; Waweru and Uliana 2005). According to Otley, (1980:413), "The contingency theory of management accounting is based on the premise that there is no universally appropriate accounting system applicable to all organizations in all circumstances. Rather contingency theory attempts to identify specific aspects of an accounting system that are associated with certain defined circumstances and to demonstrate an appropriate matching."

According to Innes and Mitchell (1990) and Fisher (1995), the specific circumstances influencing management accounting comprise a set of contingent variables which may include but are not limited to: (1) the external environment, (2) the technology, (3) the organisation structure, (4) the age and (5) the firm's competitive strategy and mission. These contingencies are regarded as important determinants of the design of the most appropriate management accounting system.

Demsetz and Lehn (1985) and Brickley and Dark (1987) find that the variation in ownership structure is explained in part by variation in firm characteristics such as size, location and ownership risk. Compensation practices are also heavily influenced by the regulatory framework within which the firm operates (Stathopoulos, 2004). We therefore expect the compensation practices of Canadian banks to differ from those of their counterparts in South Africa because many incentive plans rely on performance measures which emanate from the accounting systems, which are in turn contingent to country specific factors. Cultural differences between Canada and South Africa may also lead to different compensation arrangements. For example, the South African society is a high context culture with a strong sense of family while bargaining is not part of the South African business culture (Katja, 2001). In contrast Canada has a low context culture with low commitment to relationships (task more important than relationships) and very little is taken for granted during business bargaining (Hall, 1990).

Ang et al (2002) examined how US banks compensate their top management teams (i.e. the CEOs and the other top executive teams). They found that the CEOs receive not only greater pay in absolute dollars but are also rewarded more in relation to performance. However differences among the second tier executives were less clear and were generally statistically insignificant. In our study we investigated the compensation of the CEOs, other named executives and that of the non executive directors.

Chung and Pruit (1996) examined the factors that affect executive ownership, the market value of the firm and executive compensation. Their findings supported the notion that a firm's market value, executive stock ownership and executive compensation are endogenous. Their findings are consistent with the view that the firm optimally establishes its managerial compensation plan in response to its operating environment.

Kato et al (2002) examined the adoption of stock options by Japanese firms. They reported that option plans are more likely to be adopted by firms with more growth opportunities.

To summarize, the following country specific factors are expected to create differences in the compensation schemes of the two countries:

a) Size: Canadian banks are larger in size than their South African counterparts. Canadian bank executives are therefore expected to receive higher compensation.

b) Technology: The level of technological development in Canada is higher than in South Africa. Information processing costs are therefore lower in Canada than in South Africa. Information processing costs will affect the nature of performance measures used in the determination of compensation schemes/levels.

c) Human resources: Like most developing countries, South Africa suffers from the problem of shortage of skilled human resources (Waweru, Hoque and Uliana, 2004). The shortage of skilled manpower in South Africa is expected to lead to higher demand for executives which would result to higher compensation levels.

d) Risk: Being an emerging economy, South Africa experiences higher information asymmetry than Canada. Higher risk would theoretically lead to higher option values (Black and Scholes, 1973). We therefore expect option values to be higher in South African than in Canada. South African executives are therefore expected to prefer long term pay to short term pay.

e) Regulatory/cultural differences.

Executive compensation schemes

Compensation plans are vehicles of delivery of pay to the executives in a manner that attempts to motivate them to maximize shareholder's wealth. The primary functions of an executive compensation plan are to attract, retain and motivate executives while controlling the potential agency costs associated with the separation of management and ownership. Anyangu (2005) identified the following as the main features of management compensation schemes.

a) The plan should be easy to monitor because it is based on objective criteria easily observed by all concerned parties and incapable of being manipulated.

b) The plan should prevent excessive perquisites to management and should minimize shirking thus encouraging expenditure decisions that benefit shareholders.

c) The plan should have a long horizon to match the perspective of the shareholders.

d) The plan should attempt to match managers' risk to that of shareholders while recognizing that shareholders can diversify away from idiosyncratic risk of the firm more easily than managers who have their human capital tied to the firm's future.

e) Management compensation should be tied to changes in the shareholders' wealth and if possible to management's specific contribution to changes in shareholders' wealth. For example a firm can under perform relative to its competition but still experience an increase in share price simply because the market went up.

f) The tax efficiency of plans should be compared. If two plans are alike in most aspects but one is designed to minimize the tax liability of the firm and its management, then its tax efficiency may become the decisive factor.

Bushman et al (1996) investigated the use of individual performance evaluation in CEOs' incentive plans. They found that individual performance evaluation increases with growth opportunities and product time horizon (measured by Product development and life cycle). Conyon and Murphy (2000) found substantial differences in pay practices; particularly in terms of a significantly greater use of stock options in the U.S than in the UK. Earlier studies (e.g. Hall and Liebman, 1998; and Murphy, 1999) investigated the moneyness of stock options in the U.S. They concluded that stock options were almost always granted at the money, i.e. with an exercise price equal to the market price at the time of grant, and at times out of the money, i.e., with an exercise price above the market price at the time of grant. Importantly, out of the money options increase the pressure on management to perform above the market norm.

Stathopoulos et al (2004) examined the executive compensation practices of listed U.K retailing companies. In contrast to the US, they report that some options were being granted substantially in the money in the UK They also found some systematic differences between the compensation arrangements of CEOs and other executives.

The literature revealed limited research of compensation schemes in the banking sector. For example Ang, Lauterbach and Schreiber (2002) argue that compensation comparison within top executive teams have not been receiving adequate attention, as most empirical research focused exclusively on the CEO position. However, the management team and not just the CEO bear the bulk of the responsibility for the firm's performance. This study seeks to extend the literature by investigating the inter-rank differences in the structure of compensation and also compare the executive compensation practices of banks operating in a developed country and an emerging economy. Further, this study includes the compensation data of non executive directors.

This study was guided by the following research objectives:

1) *To identify; the nature of executive compensation schemes of the banking sectors of Canada and South Africa; the level/value/cost of each scheme in terms of the CEO, Non executive board members and other named executives.*
2) *To compare the compensation schemes of the two countries and, using contingency theory, analyze and explain the factors that may influence compensation schemes in the two economies.*
3) *To determine whether there is a relationship between the nature of the compensation schemes used and the value of the firm.*

DATA AND METHODOLOGY

Data was obtained from the 2005 public disclosures of the selected banks. In Canada we examined the management information circulars (Proxy circulars) issued to the shareholders by the banks (source; www. Sedar.com/display company documents) and any other information from the annual reports. In South

Africa we reviewed the remuneration reports (part of the audited reports) and any other available information in the 2005 reports. The studied banks are listed in Table 1:

Following previous studies (e.g. Kato et al 2005, Stathoulos et al 2004, Conyon and Murphy 2000, Murphy 1999), total compensation is defined as the sum of base salary, annual bonus, the estimated value of share options and other long term incentive plans (LTIPs). Where an executive has been employed for less than one year, we annualize the salary by multiplying the reported figure by the ratio of 12 over the number of months in the post. To reflect regular annual compensation, we should eliminate sign-on compensation figures. We found no explicit disclosure of sign-on compensation, however this does not mean that none was paid and, consequently, a risk exists that pay for the few newly hired executives was overstated.

Table 1: Selected Banks

Canada	South Africa
Bank of Montreal	ABSA Bank
Bank of Nova Scotia	First National Bank of South Africa
Canadian Imperial Bank of Commerce	NED Bank
HSDC Bank	Standard Bank of South Africa
Lauretian Bank	
National Bank of Canada	
Royal Bank of Canada	
Toronto Dominion Bank	

The Market Value of the firm (MV) is defined as the market value of the firm's equity at the end of the year plus the book value of assets at the end of the year minus the book value of equity at the end of the year (Smith and Watts (1992), Kato et al (2005)). We measure Growth Opportunities (go) using the market-to-book ratio, defined as the book value of total assets less the book value of equity plus market value of equity all divided by book value of total assets (Kato et al 2005).

Share Prices were obtained from the firm's audited accounts or from the Toronto Stock Exchange for Canadian banks and the Johannesburg Stock Exchange in the case of South African banks. Revenue is the banks total income for the year ended 2005.

Content analysis and descriptive statistics are used to identify the nature and level of the compensation schemes of the companies under study and to assess the differences between the two countries. We use OLS regression analysis to determine whether there is a relationship between the compensation schemes and the value of the firm, with remuneration as the dependent variable and the firm's value and revenue (a control variable) as independent variables. The regressions are estimated separately by director type (CEO, executive (other named officers) and non executive directors and by type of compensation (salary, bonus, long term compensation and total pay all expressed in natural logarithms).

$$ln\ (salary) = a_o + a_1\ ln(MV) + a_2\ ln(revenue) + a_3\ dummy + e$$

$$ln\ (bonus) = b_o + b_1\ ln(MV) + b_2\ ln(revenue) + b_3\ dummy + e$$

$$ln\ (long\ term) = c_o + c_1\ ln(MV) + c_2\ ln(revenue) + c_3\ dummy + e$$

$$ln\ (total\ compensation) = d_o + d_1\ ln(MV) + d_2\ ln(revenue) + d_3\ dummy + e$$

Similarly the relationship between the compensation schemes and the firm's growth opportunities is tested.

$$ln\ (salary) = a_o + a_1\ ln(go) + a_2\ ln(revenue) + a_3\ dummy + e$$

$$ln\ (bonus) = b_o + b_1\ ln(go) + b_2\ ln(revenue) + b_3\ dummy + e$$

$$ln\ (long\ term) = c_o + c_1\ ln(go) + c_2\ ln(revenue) + c_3\ dummy + e$$

$$ln\ (total\ compensation) = d_o + d_1\ ln(go) + d_2\ ln(revenue) + d_3\ dummy + e$$

Where MV is the market value of the firm, revenue is the total income reported at the end of 2005, long term is the value of the long term pay (sum of stock options for 2005 and LTIPs) and total compensation is the sum of base salary, annual bonus, stock options and LTIPs. The revenue variable is added to control for the size of the organization. A country variable dummy (Canada = 1; South Africa = 0) is also added to help confirm country differences.

RESULTS

Descriptive statistics

Table 2 shows descriptive statistics of the banks studied by country at the end of 2005. As discussed before, Canada and South Africa have in common banking sectors dominated by few major banks. While Canada has twice as many major publicly-traded banks, we prefer analyzing populations in each country rather than opting for paired sample analyses with even fewer observations. Banks in Canada are on average (and statistically significantly at $p=0.01$) larger in terms of market capitalization, total assets and revenue. However growth opportunities are higher amongst South African banks. This may be attributed to the increase in Investment opportunities after the liberalization of the South African Economy in the mid 1990's.

Table 2: Descriptive statistics of the studied Banks*				
	Obs	**Mean**	**Median**	**Std**
Canada				
Market capitalization (billion $)	8	29.98	29.73	14.83
Revenue (million $)	8	9.08	9.71	5.66
Growth opportunities	8	88.38	96.76	37.69
Total assets (billion $)	8	23.72	28.84	16.12
Book Value of Equity (billion $)	8	1.13	1.22	0.57
South Africa				
Market capitalization (billion $)	4	8.92	8.52	2.15
Revenue (million $)	4	3.33	4.25	12.27
Growth opportunities	4	105.05	130.78	53.94
Total assets (billion $)	4	5.90	4.72	1.14
Book Value of Equity (billion $)	4	0.50	0.43	0.21
* All amounts are in Canadian Dollars				

Nature of compensation schemes

In Canada executive directors and other named officers receive a base salary, a variable annual compensation (bonus) and long term incentive awards which include options and restricted shares. Except for the base salary (which is guaranteed) other compensations are pegged on certain levels of performance (both financial and non-financial). Six out of the eight Canadian banks studied use the measures summarized in Table 3 to determine the level of the short term and long term executive compensation.

Non executive directors receive an annual director's fee (known as an annual retainer). However seven of the eight banks require non executive directors to receive a certain percentage of their annual retainer in form of deferred share units (DSUs) or common shares. These DSUs have no voting rights but receive dividend equivalents credited as additional DSUs. The DSUs can only be redeemed after the director ceases to be a director of the bank.

In South Africa, executive directors receive a base salary and benefits (mainly medical), and a performance based annual bonus. The most common LTIP are retirement pensions. As shown in Table 4 only one of the four CEOs received options and common shares in 2005. An important feature of the annual bonus is that performance is mainly based on financial measures (profit and earning per share). Non executive directors receive only a cash-based annual director fees.

The differences between the two countries are mainly attributed to their different operating environment. For example, the high levels of technology in Canada leads to low information processing costs and hence the use of non financial measures of performance. On the other hand, South Africa being a developing country experiences low levels of technology (Waweru and Uliana, 2005) making the use of non financial measures quite expensive.

Table 3: Measures used to determine performance in Canadian banks	
Measure	**Goals**
Financial	1) Return on equity 2) Diluted earnings per share growth 3) Long term shareholder value through increases in dividend and stock price appreciation
Customer	High levels of customer satisfaction and loyalty (measured by external and internal measures)
Operational	1) Productivity ratio 2) Sound ratings 3) Compliance with the best corporate governance practices 4) Strong capital ratios
People	1) High levels of employee satisfaction 2) Advancement of women and visible minority into management positions 3) Commitment to corporate social responsibility
* Source; Various Audited accounts (2005)	

Table 4 section A below shows the number and proportion of directors receiving a particular compensation scheme broken down by country and by director type. A total of 242 compensation contracts were studied. These were classified into three categories; the Chief Executive Officers, executive officers (or named officer) and the non-executive directors.

The results in Table 4 indicate that the base salary levels of CEOs and other executives of Canadian banks are higher than those of their counter parts in South Africa. The results further indicate that South African banks executives receive their annual compensation mainly in form of bonus, which is significantly higher than that received by their Canadian counterparts. These findings are inconsistent with theory which states that executives in developing countries prefer to receive most of their compensation in shares and options (long term incentives), higher risks is associated with their higher option values (Black and Scholes, 1973). In terms of director's total compensation, executives in both countries receive almost equal pay on average. These findings are consistent with those of Conyon and Murphy (2000) who indicate that the generally high compensation of U.S. CEOs may have put pressure on executive compensation elsewhere mainly due to the globalization of the world economy.

The results further indicate that the CEO compensation is significantly higher than that of other executives in both countries. For example the average total compensation of CEOs in Canada is over 50% more than the average total compensation of other executives. Stathopoulos et al (2004) reported some systematic differences between the compensation arrangements of CEOs and other executives. An interesting finding of this study is that non executive directors of South African banks receive more annual fees on average than their Canadian counterparts. However, in Canada non executive directors are required to receive part of their annual fees in form of shares or DSUs and their total earnings are higher. The high fees paid to Non executives in South Africa may be attributed to the fact that it is quite risky for a person to serve on a board in South Africa; therefore they would want a higher fixed income rather than a bonus. In addition there is a shortage of skilled people to fill these positions in South Africa.

Table 4: Descriptive statistics of the compensation of directors							
Director	**Total Number**	**Base salary (CEO & Executives)/ Cash Retainer & Meeting Fees (Non-Executives)**	**Bonus**	**Options**	**Shares/DSUs**	**Pension**	**Total compensation**
Section A		N	N	N	N	N	
CEO	12	12	10	8	8	10	
Executives	46	46	39	36	33	42	
Non-Executives	184	184	0	0	116	0	
Canada							
CEO	8	8	6	7	7	6	
Executives	36	36	31	36	31	32	
Non-Executives	112	112	0	0	112	0	
S. Africa							
CEO	4	4	4	1	1	4	
Executives	10	10	8	0	2	10	
Non-Executives	72	72	0	0	4	0	
Section B*		Can$000	Can$000	Can$000	Can$000		Can$000
		Mean	**Mean**	**Mean**	**Mean**		**Mean**
CEO	12	1704.6	4344.2	1882.9	1722.7		7728.5
Executives	46	770.9	2022.2	868.8	1116.6		3566.0
Non-executives	184	247.1	0	0	1066.7		867.4
Canada							
CEO	8	2198.0	2544.8	2362.1	2315.8		8197.7
Executives	36	444.1	1361.2	868.1	1119.2		3465.3
Non-executives	112	121.1	0	0	1752.5		1278.7
S. Africa							
CEO	4	717.5	6574.6	201.1	589.4		7489.7
Executives	10	516.7	4005.4	0	0		3721.0
Non-executives	73	437.4	0	0	474.8		457.2

A notable difference between the executive compensation schemes of the two countries is the widespread use of options amongst Canadian banks. This is despite the theoretical expectations that Canadian executives would prefer short term incentives to long term incentives. All the named executive officers and

88% (7/8) of the CEOs in Canadian banks received share options in 2005. In South Africa only one CEO received share options in 2005. Consistent with the contingency theory these differences are mainly attributed to the different regulatory and cultural environments that exist between the two countries. Consistent with the findings of the U.S. studies (e.g. Conyon and Murphy, 2000; Murphy, 1999), most of the share options were issued at the money for a 10 year period. The findings also indicate that all the non executive directors in Canadian banks received shares/DSUs in 2005 but only 6% of the non executive directors received shares in South Africa.

Determinants of compensation levels

The regression results (Table 5) indicate that there is a significant positive relationship between the salary and bonus paid to the CEO and the value of the firm. Further, there is a significant positive relationship between the fees paid to non executives and firm size. This implies that larger firms pay higher fees to non executive directors. However, we find no significant relationship between the salaries and bonus paid to other executives and the firm's value. Furthermore there is no significant relationship between the salaries paid to non executive directors and the firm's value.

In both sections (A and B), the explanatory value of the model is much greater for bonus of executives than it is for salaries and long term pay for executives. For example, in section A the explanatory value of the CEO bonus regression is 74.7 percent compared with 65.3 percent and 54.2 percent for salary and long term pay respectively. The country dummy variable is significant and negative. This suggests that there are systematic differences between the two countries and that South African executives receive higher compensation than their Canadian counterparts (after controlling for size).

The study reports a significant positive relationship between the long term pay for CEOs and the value of the firm. Further, the study found a significant positive relationship between the total compensation paid to both CEOs and other executives and the size of the firm, an indication that larger firms pay more than smaller firms. However there is no significant relationship between the long term pay relating to other executives and the value of the firm.

We found a significant positive relationship between the CEO salary and bonus and the market value of the firm. However we find no significant relation between the compensation of the other officers (other executives and non executives) and the value of the firm. We also found a significant positive relationship between the bonus and salary for CEOs and the growth opportunities of the firm. However there is no significant relation between the long term pay and the growth opportunities of the firm. Interestingly the results indicate a significant relationship between the salary for other executives and the firm size but no significant relationship between the fees for non executives and firm size. These results suggest that unlike the salaries of company executives, non executive director's fees are not dependent on the size of the firm.

Table 5: Regression Results									
Independent Variable	**Salary/Fees**			**Bonus**		**Long term**		**Total pay**	
	CEO	**Other execs**	**Non execs**	**CEO**	**Other execs**	**CEO**	**Other execs**	**CEO**	**Other execs**
Section A									
Intercept	2.341**	1.645**	5.332	2.706***	4.263**	2.724	5.056	2.157*	0.756
ln (MV)	0.817*	0.242	0.0283	0.342*	0.621	0.672**	0.044	0.277**	0.798
ln (revenue)	0.672***	0.072	0.165*	0.183**	0.147	0.216	0.349	0.284**	0.372*
Dummy	-2.963**	-1.832*	0.964	-3.74***	-1.063	-4.023*	0.729	-5.02**	-1.123
R^2	0.653	0.517	0.324	0.747	0.513	0.542	0.125	0.543	0.479
Adj. R2	0.587	0.452	0.263	0.718	0.437	0.491	0.003	0.526	0.448
RSME	1.053	2.742	4.651	0.986	3.410	1.748	6.729	1.007	3.742
Section B									
Intercept	2.814**	1.866	5.914**	2.442	0.521	2.373*	6.918**	2.427	18.781
ln(go)	0.0493***	0.495	-0.018	0.0324**	1.427	0.032	.0963	0.138	0.386
ln (revenue)	0.073	0.324	0.276*	0.391	0.101	0.272**	-0.0121	0.421*	0.446**
Dummy	-3.535**	-1.749	4.752	-9.014*	-4.006	-0.263	0.042	-6.387	0.679
R^2	0.765	0.332	0.286	0.538	0.384	0.189	0.214	0.562	0.1 81
Adj. R2	0.752	0.184	0.016	0.493	0.261	0.061	0.185	0.510	0.006
RSME	0.954	3.629	2.254	1.462	5.539	3.486	3.015	1.732	7.263
*,**, *** level of significance at 10 percent, 5 percent and 1 percent respectively									

DISCUSSION AND CONCLUSIONS

This study examined the level and structure of executive compensation schemes in the banking industry in Canada and South Africa. We further examined the relationship between the types of compensation schemes and the market value of the firm.

The most common executive compensation schemes in Canadian banks include a base salary, an annual variable component and LTIPs which include options and common share/DSUs. Variable incentives are based on both financial as well as non financial measures of performance, similar to the Balanced Scorecard philosophy. Non-executive members of the board of directors' compensation are in the form of annual fees but incumbents are required to receive a portion of their fees in the form of company shares or DSUs. This is consistent with agency theory and aligns the interests of these officers to the interests of the shareholders.

In South Africa, executive officers compensation is mainly in the form of a base salary with benefits and a performance based annual bonus. The bonus payment is based mainly on financial measures such as

profits and earnings per share growth. Except for retirement pension, LTIPs are almost absent. Compensation of non executive officers is mainly in the form of annual directors fees. There is no requirement for either executive or non executive officers to own shares in the banks.

The study found that CEOs in South African banks receive significantly higher compensation than their Canadian counterparts. The findings of this study contradict the widely held view that executives in developed countries receive higher compensation than those in emerging economies. Our findings may help reduce the brain drain problem currently being faced by developing countries. Further, CEOs in both countries receive substantially higher compensation than other executive officers. Consistent with the findings of previous studies (e.g. Stathopoulos et al 2004) there are systematic differences between the compensation arrangements of CEOs and other executives.

Our findings indicate that growth opportunities are higher amongst South African banks than in Canadian banks. This suggests that investing in emerging market bank stock may yield higher returns when compared with those of developed countries.

The study found a significant positive relationship between the CEOs compensation and the value of the firm. There was also a significant positive relationship between the CEOs compensation and growth opportunities, an indication that CEOs in firms with higher growth opportunities receive more compensation. This is consistent with the findings of Smith and Watts (1992) who reported that firms with more growth opportunities are more difficult to monitor. There is also a significant positive relationship between CEO long term pay and the value of the firm.

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GLOBALIZATION OF FINANCIAL MARKETS AND REFLEXION TO TURKISH SMALL AND MEDIUM SCALE ENTERPRISES: BASEL II

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ABSTRACT

Bank for International Settlements (BIS) is an international enterprise that had been formed by central banks of various countries in 1930. A working group called "Basel Committee" had been formed within BIS in 1974 in order to make studies about banking. The purpose of financing function is to get the funds in optimum conditions that firm needs and provide the usage of these funds effectively. As from the early 20th Century in USA and Europe, significant improvements had materialized in the field of financial management. In recent days, significant improvements had materialized in banking, risk management application and technique, in financial markets and control approach as they had in other fields as well. Credit institutions and the enterprises which demand credit will be affected directly from this application by the start of adhibition of Basel II criteria. In this study, the effects of Basel II application on Turkish Small and Medium Scale Enterprises will be examined.

INTRODUCTION

In global capital world, international capital investments increase quickly. In this process, all of the national economies want to take interest from financial resources which circle the globe. This demand gets within the charm area of economic systems which hadn't integrated to global markets or been in this process. The countries which are fascinated by global capital movements need to modify their financial systems in order to take interest from this resource.

At this point, the economies need to follow the global rules in order to expand in global markets. In this context, these countries need to make arrangements and act with the context of Basel II which can be respected as the global rules of financial markets.

In this study, we will examine the arrangements that economic systems need to make in financial markets and the possible effects of these arrangements to economic systems.

THE MEANING AND SCOPE OF FINANCING CONCEPT

The purpose of financing function is to get the funds in optimum conditions that firm needs and provide the usage of these funds effectively.

As from the early 20th Century in USA and Europe, significant improvements had materialized in the field of financial management. In conjunction with industrialization, fund demand of developing enterprises had increased and meeting these demands had become a significant problem. In spite of excessive fund

demand, the transfer of small savings into major enterprises wasn't easy. Financing had been understood as creation of currency and provision of funds by reason of excessive fund demand. In other words, financing concept is known only as providing funds until 50's. Growth of enterprises and improvements of incorporated businesses had added weight to provision of financing. In this context, it is considered that the basic duty of financial management is to provide adequate and low-cost funds for enterprises on time (Ceylan, 2003: 4).

BASEL COMMITTEE AND NEW CAPITAL ADEQUACY ARRANGEMENT

Bank for International Settlements (BIS) is an international enterprise that had been formed by central banks of various countries in 1930. A working group called "Basel Committee" had been formed within BIS in 1974 in order to make studies about banking. The purpose of committee which is formed by 12 members including USA, Germany, Belgium, France, Holland, Sweden, Switzerland, England, Italy, Japan, Canada and Luxemburg is to monitor the possible crisis in banking and exchange markets and provide a common standard in banks' working. Basel Banking Control and Audit Committee within BIS have initially published Basel Capital Accord in 1988. According to Basel I, capital adequacy of banks must be at least %8. The rate of capital to risk assets had been considered in calculation of capital adequacy (Pinelli, 2005: 3).

In recent days, significant improvements had materialized in banking, risk management application and techniques and control approach. Committee had prepared a new draft arrangement in order to substitute 1988 dated arrangement and committee had announced this draft as Basel II principles in 2004. These principles have been accepted by all banking sectors and it is expected that the arrangements will be activated in many countries between 2007 and 2009 (Rodriguez, 2003: 120).

Over two hundreds opinions had been delivered by interested parties about new arrangement which has more risk sensitivity. In project, draft standards in 1999 had been accepted as risk weight of countries. As for the risk weights of countries, the criteria of the ris weight's applied to bank being a degree more than the country's and weighing according to the bank's rating from outer leveling instutitions and also risk's period had been determined to be appropriate.

Purposes and Essential Elements of New Arrangement

Basel II principles had been formed with a view to restructure the banking sector. Risk management and valuation standards are being changed by Basel II principles. It is expected that enterprises which use credits will be affected by the reason of changing standards. The risks, grading notes, country advices of enterprises will be the main factors which determine credit cost by activation of Basel II principles. It will be important for enterprises to have a confidential financial reporting process and adequate operational management culture to corporate governance principles in this period.

Basel Committee expects that the revision which will be made in January 2001 dated new capital arrangement meet the control and audit goals below. According to this, new arrangement (Yayla and Kaya, 2005: 4);

- Measuring the pending risks separately and better for each enterprise,
- Saddling top management with a responsibility in banking sector,

- Presentation of enterprises' and banks' financial accounts to public in a secure way,
- Setting up the whole banking system and capital market on a sound basis and making them more competition oriented and more stable,
- Maintaining the encouragement of stability and security in financial system and so protecting the overall level of capital in capital frame system,
- Need to increase competitive equality,
- Need to form a more comprehensive approach intended for handling the risks,
- Need to focus on international banks, but basic principles must be same for the banks which are on the different complexity levels.

New arrangement has intended to form a structure which has more risk sensitivity and more elastic, risk sensitivity increase in calculation of capital and new arrangement also has aimed at incentive and compatibility increase in regulating obligations.

Table 1: Comparison of New and Old Arrangements of Basel Committee

Old Arrangement	New Arrangement
Focused on mono type risk measurement.	Bring internal risk management methodologies, audits and market discipline oriented structure.
Mono type model is applied for all of the enterprises.	Provide more flexible application (capital encouragements can be applied for a better risk management)
Risk basis oriented Capital adequacy structure.	More sensitive to risk.

Reference: Banks Association of Turkey; New Capital Adequacy Arrangement of Basel, October 2002, s.3.

Basel II principles had been put on three basis as minimum capital adequacy, control of capital adequacy and market discipline.(Ferguson,2003,397)

Minimum Capital Adequacy

Minimum capital adequacy had been defined in the first part of arrangement. Definition of available capital and the condition of % 8 available capital adequacy ratio had remained same in the new arrangement. But sufficient modifications had been made on the denominator of ratio. Credit risk had been defined in details, no changes had occurred on market risk and for the first time, transaction risk had been added (BAT, 2002:5).

$$Capital Adequacy Ratio = \frac{Total Capital}{(Credit + Market + Transaction Risk(i)} = Bank Capital Coefficient\ (At Least\%8)$$

Two different approaches are suggested for credit risk; standardized approach and internal grading based-approaches.

Standardized approach is the same as the present application in 1988 dated arrangement but risk sensitivity is higher than it. Personal risk weights lean on the category (countries, banks or enterprises) which includes the debtor. But personal risk weights will be determined by the criteria of an international grading enterprise with the new arrangement.

Risk weights had been determined as per different categories in standardized approach;

1. Risk weights of countries (sovereign claims),
2. Two different options exist for risk weight of banks:
   - Whole banks in a country will be evaluated as one category lower than risk weight of country (Banks I).
   - Risk weights are leaned against grading notes that bank got from grading enterprises (Banks II)
3. Corporation risk weights
4. Risk weights of real-estate credits.

Audit of Capital Adequacy

The purpose of control is to be sure about banks have internal methods that can determine required capital in response to valued risks in a correct way. Banks need to dispose of capital in the ratio of their risks and the supervisors are responsible about to adjust this. In case of the usage of internal methods, they could be in charge of control and intervention. Determined principles for control and audit process within new arrangement are:

1. Banks need to develop strategies that can protect their level of capital and a process that can associate their risk profile with their capital adequacy.
2. Control authority must examine, evaluate, monitor and intervene in these process and strategies.
3. Control authority must provide banks to have minimum capital adequacy.
4. Control authority must intervene in capital adequacy before it decreases under minimum rate.

In the control authority part of structure, banks are needed to be inspected by an authorized upper authority in terms of operation of activities and system. This control authority is Banking Regulation and Supervision Agency (BRSA). Risk management systems of banks are evaluated, and it is expected that each bank set an adequate risk control system in control process. In Turkey, BRSA which is establish related to control of banking system, 4389 numbered law which is made for banking risk management system, Risk Management and Audit Techniques Office can simplify to apply Basel II principles (Beşinci and Kaya, 2005: 60).

Market Discipline

Market discipline in new structure will be provided by lucid exhibition of banks. A lucid structure is needed in order to make market participants have more information about risk structure and capital

adequacy of banks. Together with required more particular circumstances for credit risk, techniques of decreasing credit risk and supervisory acceptance of active securitization, transparency standards are valid for all banks. It is expected that banks have to be confidential and lucid about giving information to market and concerned parties in market discipline part of system. (Koğar, 2006: 3; Alp, 2005: 59).

Financial Markets and Basel II

In recent years, when the economic depressions in the world are examined in detail, it is obvious that the main reason of them is deficiency of risk management model (Christoffersen and Errunza, 2000: 3-20). Basel Committee had focused on risk management on capital markets in their studies. Basel II principles are the continuance of Basel I principles. In Basel I, while capital adequacy was calculating, only credit risk had been added on calculation, market risks and operational risks hadn't been taken into consideration. As known, operational risks of enterprises which use credits from banks are important factors in return of credits. Evaluation of this risk and usage in calculation of capital adequacy is necessary for banking sector. In Basel II principles, this risk is considered in calculation of capital adequacy. The method relating to measurement of capital which is needed to be kept against risk assets had changed partially and new methods had been developed in the field of measurement of credit risk (Yüksel, 2005: 5).

Committee had studied on standard and internal grading oriented methods of credit risk measurement. In this context, the importance of usage of standard risk measurement approach had been repeated again and opinions and suggestions relating to these topics which are submitted by market participators and other concerned parties are considered. On the other hand, significant improvements are performed in the fields of securitization of assets and technical discussions relating to specialization credits and the schedule was rearranged according to this.

According to Basel II principles, not only credit risk but also market risks and operational risks should be considered in calculation of capital adequacy. Operational risk is the suffering assets of enterprises by reason of negativity that enterprises encounter in employees, systems applied and control processes (BIS, 2005a, 140).

While operational risks are being evaluated, political risks, economic risks, legal risks, market risks and financial risks must be considered (BIS, 2005b, 24-35; Wyk, Dahmer and Custy, 2004: 264). Market risks are the risks that can be revealed by viable developments in general economy or in the sector that the banks show activity. Credit risk is the nonpayment risk of the credit that is granted by the bank. In traditional, while it is easy to measure the credit and market risks, it is not easy to form the boundaries and measurement of operational risks (Rosenberg and Schuermann, 2005: 1-46).

POSSIBLE EFFECTS OF BASEL II PRINCIPLES TO ENTERPRISES AND NATIONAL ECONOMIES IN THE PROCESS OF TRANSITION

Necessary preparations about applications of Basel II principles had been mainly completed by banking sector. Concerned changes will affect the financing costs, processes of financial reporting and accounting structures of enterprises and also these changes will force to be made various changes in these areas. New capital arrangement aims at more effective risk management, more secure and more effective banking activities in conjunction with ascribing new costs to banks.

Table 2: Evaluation Associated with New Capital Arrangement of Basel Committee	
Expected Effects of New Arrangement	Costs That New Arrangement Will Cause
Capital requirement will decrease.	The cost and needing of information to public opinion will increase.
Risk management will be better.	A cost will be point at issue for the establishment of required systems and their operation.
Better relations will be developed with systematizer authority.	The cost of collecting the required data will progress.
The relation between market and credit enterprises will be better.	Required costs for operation of systems and laboring of employees will progress.
Reference: Price Waterhouse&Coopers, FS Regulatory Alert, No:1.	

Basel II In Terms of Credit Cost

Though it can vary from one enterprise to another, average cost of a small enterprise's grading is anticipated around 30.000 Euro (Uyar and Aygören, 2006: 59). And this can cause unexpected cost load for enterprises. These numbers has a probability of being high then it is expected. Because, according to a research; it is estimated that the cost of Basel II application will be higher than expected in terms of both enterprises and banks (Mearian, 2005: 48). The general effects of credits to enterprises and markets are listed below:

- The credit cost that enterprises will use will change depending on grading note with Basel II application (Mısırlıoğlu, 2006: 30). When the grading notes keep decreasing, credit risk and the cost credit will increase and it will get hard to take credit for concerning enterprise (Yüksel, 2005: 37). Grading enterprises will decrease the grading notes of enterprises which have insufficient equity capital structure (Uyar and Aygören, 2006: 61). This means that, the credit costs of these enterprises will be higher. But the enterprises which have high grading notes will be able to provide financing at a low rate of interest (Banks Association of Turkey, 15.01.2006).
- Mortgages which are approved today will lose ground with Basel II principles. In this context, the enterprises which have high management quality, strong financing structure and ability to present required informations on time and adequate way will be able to use credit in better circumstances.
- Basel II principles will force enterprises to institutionalize. Therefore, Basel II principles can provide enterprises take interest from foreign capital movements by making it easier to find foreign partners for enterprises.

Effects of Basel II Criteria to Market Institutionalization and Accounting Systems of Enterprises

The effects of Basel II principles to enterprises' accounting structure can exist in point of abolition the effects of tax laws in accounting applications and in point of implementation of corporate governance applications. Continuation of this process, it is expected that Basel II principles will affect the financial reporting processes of enterprises significantly. At this point, transparency of financial reporting process, independent audit, internal control system, internal audit and risk management will be more important for enterprises. It should be expected that Basel II principles will cause significant changes. In this context, the effects of Basel II principles to internal economic system and institutionalization, accounting and the other systems of enterprises are sorted below:

- Application takes on a shape predominantly within the terms of tax regulations in Turkey by reason of deficiency of basic standards which will be used in financial reporting process. Financial accounts which are focused on taxes however, receded to show the truths. Implementation of accounting standards into application is critically important for reliability and transparency of financial accounts that Basel II principles predict (Koğar, 2006: 21).
- Corporate governance principles which are equality; equal treatment for allotters and beneficiaries in all activities, transparency; announcement of financial and qualitative informations concerning enterprise on time, accurate, definitive and consistent to public, accountability; necessity of rendering of accounts to shareholders by management, responsibility; compatibility of enterprise's all activities with regulations, main agreement and inter corporate arrangements and the control of this are accepted in Basel II principles (Yüksel, 2005, 37; Uyar and Aygören, 2006:63).
- Basel II criterions will contribute to transparency on preparation of enterprises' financial accounts. Basel II principles want grading enterprises to analyze the process of financial reporting and financial accounts. According to Basel II principles, cooperation which will be established between banks and enterprises in financial reporting process is basic condition for providing transparency (Uyar and Aygören,, 2006: 65). In this context, enterprises need to submit all of their financial informations to banks and concerned grading enterprises on time, adequate, transparent and a secure way.
- Independent audit applications will become widespread within enterprises.
- At the present day, internal control system and internal audit had became necessity. Internal audit which is imperative only for banks and stock brokers will become a property in request by Basel II principles. Thus, enterprises need to set to work directed to compose an internal audit system.
- By reason of mushroom growths in economy, enterprises need to discover new strategies in order to secure their competitive advantages. Risk management and risk-focused audit are at the head of these strategies (Kishalı and Pehlivan, 2006: 76). In recent days, accounting and financial reporting scandals had added to weight to risk management department of enterprises (Beasley, Clune and Hermanson 2005: 522). However, the risks which each enterprise will be exposed can show varieties by reason of different properties of enterprises.

Thus, enterprises need to form a specific model. This risk model can be a static risk model or a dynamic risk model which came into prominence lately (Fehle and Tsyplakov, 2005: 3-47). Researchs about this subject showed that enterprises which has a adequate risk management system got through the negative circumstances (O'Donnell, 2005: 177-195). According to Basel II principles, grading notes of enterprises which has adequate risk managements system will be higher than the others.

CONCLUSION

It is expected that applications of banking sector will undergo changes incoming years with Basel II principles. Basic change point is the criteria which banks looked out for while they were giving a credit. This process will affect economic systems and enterprises which provide financing from banking sector. According to evaluations which are made by Institute of International Finance upon the effects of new arrangement to global markets;

- Increase of debtor-credit quality will provide a formal credit culture.
- Improvements in trust which are related to international information resources will provide opportunities to enlargement and deepen of capital markets.
- It will give rise to increase of market discipline, transparency and competition.
- There will be fundamental transformations in customer relations and product pricing.

However, the effects of this arrangement on economic systems of developed countries will be a far cry from the effects on economic systems of developing countries. It can also produce different effects on international banks and the other banks. In this context, continuing discussions and evaluations are below;

- The most important effect of new arrangement: banks will need to review their capital position.
- On the other hand, banks will need to publish more comprehensive announcements to public opinion.
- Both systematizers and banks will need logistic and economic resources in order to apply and audit the new capital arrangement.
- It is expected that internal grading oriented approach will cause serious problems in terms of banks which doesn't show activities on the international stage.
- It is discussed that when the new capital arrangement evaluated in terms of developing countries, it will have a sufficient effects.
- Increase of capital requirements of banks is expected in the countries which will lose advantages of being a member of OECD as Turkey.
- It is the subject of criticism that many banks are not ready about human resource and data set in order to use internal grading oriented approaches in credit risk measurement in new arrangement.

- It is known that the number of grading enterprises which show activities and have adequate reliability are too low if it is assumed that the applications of banks' standard approach is presumptive.
- It is put forward that usage of governments' notes as a ceiling of grading can limit the credits on economic crisis.
- It is discussed that prescribed benefits for short term credit are relatively limited in standard approach.

In this context, the subjects that enterprises in developing economies will be affected from this process and the things due to do are listed below;

- Profitability of enterprise which has high notes will be affected in a positive direction. Because credit costs change according as grading notes that enterprises have. Mortgages such as real-estate mortgages in the process of loan contracted will lose ground. The enterprises which have a high management quality, strong financing structure and talent to present necessary informations on time and sufficiently will be able to use credits in better conditions. This means that enterprises need to focus on the activities which are aimed at raising their credit notes. So, enterprises need to strengthen their capitals, make their accounting systems transparent and locate corporate governance in their enterprises.
- Basel II principles will push family corporations to institutionalization. Because of this taking profits from movement of foreign capitals can be easier for enterprises. Thus, foreign capital inflow accelerates and economic growth can be affected in a positive direction. In this context, enterprises need to attach importance to institutionalization for their own benefits and national economy.
- Credits fewer than 1 million Euros included in retail portfolio so their risk level is low. If credits fewer than 1 million Euros separated in different banks it can gather some cost advantages. But in this point, transaction costs must be considered. Also appraisal methods that are used by banks can provide some advantages to enterprises. For this, enterprises must work with the banks that have methods for their advantages.
- Enterprises must give their financial and not financial informations to banks and related grading enterprises on time and in clear, transparent and accredited way. In a word, financial reporting process must run in transparency.
- Independent audit gives informations about reliability of financial accounts and financial reporting process. For reliability of financial accounts, enterprises should investigate by some independent sources. Also enterprises need to establish some internal and external audit systems.
- Enterprises with risk management system will have higher grading notes, so enterprises must establish a dynamic and self related risk models. Grading notes can give informations about opposite enterprise's risk degree, so grades can be used to determine operation policy. Especially in selling, buying and procurement policy it can give different options. Working with the higher grading enterprises can decrease the operation risk. With Basel II application

enterprises seem to abandon the traditional ways. They must establish more professional, transparent, informative, reliable management structure and financial reporting process.

In immediate future; enterprises which have unregistered applications, stay behind the updates in the world, don't upgrade the financial structure, don't upgrade their institutional performance, has a weak internal control structure will not be able to survive. Becoming widespread of enterprises which aren't able to harmonize to this process will generally affect economic systems. This interaction will cause to appal the economic systems in some countries as well.

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EARNINGS MANAGEMENT PRACTICES FOR VENTURE IPO FIRMS

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ABSTRACT

There are two stock exchanges available for IPO (initial public offering) firms in Korea: Korea Stock Exchange (KSE) and Kosdaq market. In comparison to the KSE, the Kosdaq market imposes relatively less stringent listing regulations. Furthermore, when a firm is designated as a venture firm by the Korean government, the firm can be listed in the venture section of the Kosdaq market which imposes minimum listing requirements. Therefore, venture firms are likely to go public only if they can meet the minimum listing requirements.

We empirically investigate earnings management practices for venture firms when they go public. We hypothesize that the different institutional listing requirements will have different earnings management implications for IPO firms. More specifically, we hypothesize that Kosdaq venture firms will have stronger incentives to manage earnings as compared to Kosdaq non-venture firms and KSE firms when the firmsi go public.

Two methods (mean difference tests and graphic approaches) were used to test the differences in earnings management practices between the Kosdaq venture IPO firms and two control samples. The results for the tests indicate that the Kosdaq venture IPO firms employ more aggressive earnings management practices than the control sample firms in the IPO year.

Key words: *Initial public offerings, Kosdaq venture firms, Kosdaq non-venture firms, KSE firms, earnings management and accruals.*

INTRODUCTION

The purpose of the study is to examine the earnings management practices for the Kosdaq venture firms in comparison to the Kosdaq non-venture firms and the KSE firms when they go public. The Kosdaq exchange, the equivalent of the Nasdaq exchange in the USA, was formally established in 1996 by combing formerly less structured and relatively dormant over-the-counter (OTC) stocks into a more lively market system. The Kosdaq exchange grew slowly until 1998. As of December 31, 2001, the number of Kosdaq firms surpassed the number of firms listed on the Korea Stock Exchange (KSE).[1]

There are three different listing regimes in two stock exchanges for IPO firms to choose from in Korea: the KSE, the Kosdaq non-venture section and the Kosdaq venture section. Firms must satisfy stringent listing criteria to be listed on the KSE.[2] The Kosdaq non-venture section requires less stringent listing requirements[3] as compared to the KSE. In contrast, the Kosdaq venture section imposes virtually no restrictions if a firm is designated as a venture firm by the Korean government. Specifically, no restrictions are imposed on financial requirements including paid-in-capital, stockholders' equity, total assets, profits or

debt ratios as long as it is a venture firm. Venture firms are so-called 'new economy' firms consisting mostly of technology or information oriented firms.

The rapid growth of the Kosdaq market with lenient listing regulations can in part explain the resulting high delisting rate. Over the five-year period from 1997 to 2001, the delisting rate for the Kosdaq exchange firms was 28.4% as compared to 17.9% for the KSE exchange.

The Kosdaq firms may face delisting because of the following events:

- false or serious omissions in the listing application and the attached documents,
- designation as an unfaithful disclosure firm more than 3 times during the past 2 years,
- default, suspension of primary business for more than 6 months, or consecutive full encroachment of paid-in capital for more than 2 years,
- inactive stock transactions for more than 3 months,
- respective stock prices are less than 20% of its par value for a certain period.

Strict listing regulations, on the one hand, may help ensure that investors have opportunities to invest in relatively safer firms. On the other hand, however, small firms with good growth potential may have limited access to public capital providers merely because they were not able to satisfy the strict KSE listing requirements. These small firms may face additional financial difficulties or be forced to forgo good investment opportunities. Therefore, there is a delicate trade-off between strict listing regulations and promotion of small firms with good growth potentials. Because the KSE and the Kosdaq market employ different listing regulations, firms may self-select stock exchanges depending on their respective firm characteristics.

Earnings management may occur when managers use their discretion in financial reporting and in structuring transactions to alter financial reports. These actions may either mislead some stakeholders about the underlying performances or may influence contractual outcomes that depend on reported accounting numbers. Incentives to manage earnings have been identified when earnings directly or indirectly affect share prices, equity issues, proxy fights, labor contracts, management compensation or government regulations.

Prior studies document that equity issuing firms tend to overstate earnings around the equity issues (Aharony, Lin & Loeb, 1993; Friedlan, 1994; Loughran & Ritter, 1995; Loughran & Ritter, 1997; Rangan, 1998; Teoh, Welch & Wong, 1998; Shivakumar, 2000; Yoon, 2001; Yoon & Miller, 2002a). Yoon (2005) compared earnings management for the KSE firms with the Kosdaq firms in general. He concluded that the Kosdaq firms tend to manage their earnings more aggressively than KSE firms when the operating cash flows are either significantly poor or good. The current study is different from Yoon (2005) in that the current study focuses on the differences in earnings management practices motivated by differential institutional listing arrangements for IPO firms in Korea.

In comparing the earnings management practices of the IPO firms in Korea, we will focus on the comparison of "levels of earnings management" rather than actual accounting policy choice for earnings management. Firms may use diverse methods to manage earnings. Aggregate accruals approach like the current study is not concerned about actual accounting policy choices. Specific accrual approach mainly examines the choice of specific accounting method to compare earnings management practices. McNichols & Wilson (1988), for example, use the specific accrual approach in examining earnings management.

Our study examines the earnings management practices for the Kosdaq venture IPO firms in comparison to the Kosdaq non-venture IPO firms and the KSE IPO firms from 1996 to 2000. We expect that firms going public will have strong incentives to manage earnings to make sure that they pass the listing requirements. The major reason for the incentives to manage earnings is that the IPO firms hope to sell out their new shares at good prices.

Earnings management studies require models that will properly separate discretionary accruals from total accruals. This study uses two methods for discretionary accrual estimation. One is the modified Jones model (Dechow et al., 1995) and the other is a modified version of Yoon & Miller (2002). Yoon and Miller indicate that the model fits relatively well for Korean firms as compared to the modified Jones model.

We use two methods to test differences in earnings management practices for IPO firms. The first method is the tests for mean accrual differences for earnings management practices between the Kosdaq venture firms and their control samples of the Kosdaq non-venture firms and the KSE firms. The second method is a graphic approach that is easier to understand by readers without strong knowledge on statistics. The graphic approach reveals a richer spectrum of average accruals across different portfolios. For the graphic approach, we rank the treatment and control samples based on CFOs to form quintile portfolios. We then analyze the mean accruals for each CFO portfolio.

RESEARCH DESIGN

Hypotheses

We assert that earnings management of IPO firms can be associated with different institutional listing regulations. Differential listing criteria will lead the would-be IPO firms to self-select the stock exchanges which will best serve their strategies. Particularly when listing requirements are less strict and the possibility of getting penalized is low, firms contemplating IPOs will have incentives to overstate their values so that stocks prices can be maximized.

Given the presence of information asymmetry, less stringent listing regulations for the IPO firms are likely to be associated with increased adverse selection problem. The cost of the adverse selection problem for the IPO firms will be wealth transfers from the new shareholders to existing inside shareholders. Wealth transfers amount to the premium paid by the new shareholders over the underlying values. Wealth transfers of this nature can be more serious for the Kosdaq IPO firms since less strict regulations are imposed on them, resulting in lower levels of transparency. Therefore, we expect that the Kosdaq firms will manage earnings more aggressively when they go public than their KSE counterparts do.

In addition to the different institutional arrangement for the IPO firms, there is one more factor that is likely to motivate firms to overstate earnings to sustain boosted share prices. One of the common features of the IPO firms in Korea is that the underwriters of IPOs are required to maintain the prices of newly offered stocks above certain levels to protect new shareholders up to three months after the IPOs. Also required is that the original shareholders are not allowed to sell their stocks until six months after the IPO. This will lead to earnings management practices by all IPO firms particularly in the IPO year. In other words, all IPO firms will have incentives to manage earnings, but the differential listing regulations will induce firms to self-select the stock exchange that will best serve their needs. Furthermore, when IPO firms choose the exchange with less strict regulations, they will be likely to exercise more opportunistic behavior.

Deriving from the above discussion, we state our first research hypothesis as follows:

H1: Kosdaq firms will manage earnings more aggressively than their KSE counterparts when firms go public.

The listing regulations within the Kosdaq market are different depending on the types of firm. Venture firms are less strictly regulated than non-venture firms in many respects including IPO regulations. Therefore, we expect that the earnings management practices for the venture firms will be more aggressive than the non-venture firms especially when they go public. Hence, we can set up our second research hypothesis as follows:

H2 Kosdaq venture firms will manage earnings more aggressively than their Kosdaq non-venture counterparts when firms go public.

Sample Selection

As discussed earlier, the Kosdaq exchange was formally established in July 1996 by organizing formerly less structured and relatively dormant 343 over-the-counter (OTC) stocks into a more lively market system. The Kosdaq exchange began to draw investors' attention slowly in 1996 and 1997. Only 331 firms were listed as of December 31, 1996. Ten firms went public in 1996. However, forty-five firms got delisted during 1996. This indicates that the Kosdaq market was very unstable in the early years of inception.

As of December 31, 2001, 721 firms including 80 mutual funds were listed on the Kosdaq exchange. During our study period, 224 new firms were listed on the Kosdaq market and 81 on the KSE. A total of 16 Kosdaq firms and 10 KSE firms were excluded from the sample because some major financial variables were not available for those firms. As a result, the final sample consists of 208 Kosdaq firms (75 venture firms and 133 non-venture firms) and 71 KSE firms. For some firms with outlying values, we have winsorized them to the 1st and 99th percentiles for individual variables rather than eliminating them from the sample because the original sample was small already.

Two reasons can be provided for the selection of our study period. First, the Kosdaq market was launched in 1996. Even though the former OTC firms were merged into the Kosdaq market, the new market setting for the Kosdaq market is different from its predecessor because the market operates in a more structured way than its predecessor. Therefore, we have not included the OTC market period in our study period. Second, the Korean accounting standards mandated cash flow statements starting in 1995. Some prior studies use a balance sheet approach to estimate total accruals. However, Collins & Hribar (2002) shows that the error resulting from using the balance sheet approach not only reduces the discretionary accrual model's power to detect earnings management, but also has the potential to generate incorrect inferences about earnings management. Therefore, we use cash flows from operations as given in the cash flow statements to avoid measurement errors resulting from the balance sheet approach.

Estimation of Discretionary Accruals

We need to identify a model that most appropriately estimates the discretionary accruals. Researcher' ability to accurately estimate discretionary accruals critically affects the success of earnings management tests. In other words, all tests are joint tests of the researcher's model of discretionary accruals and earnings management. Therefore, the development of a well fitting model is very important for this line of research. Prior research documents that the modified Jones model (Dechow et al., 1995) is generally effective. Others like Kothari et al. (2005) document that the modified Jones model ('MJ model' hereafter) is severely misspecified and tends to over reject the null hypothesis of earnings management. Yoon & Miller (2002a) also document that the MJ model does not fit well particularly for Korean firms. In this research, we use two alternative models. The first one slightly modifies Yoon & Miller model ('YM model' hereafter) and the second one is the MJ model. Since the latter has been widely used and described in prior studies, we will not describe it in this study. The YM model is described below.

$$TA_i/ REV_i = \beta_0 + \beta_1(\Delta REV_i - \Delta REC_i)/ REV_i + \beta_2(\Delta EXP_i - \Delta PAY_i)/ REV_i + \beta_3(DEP_i + PEN_i)/REV_i + \epsilon_i \quad (1)$$

Where,

TA (total accruals) = NI (accounting earnings) – CFO (cash flow from operations)
REV = net sales revenue
REC = trade receivables
EXP = sum of cost of goods sold and selling and general administrative expenses excluding non-cash expenses
PAY = trade payables
DEP = depreciation expenses
PEN = retirement benefits expenses
Δ = change operator

The YM model posits that total accruals will normally depend on changes in sales revenue, changes in expenses and some non-cash expenses including depreciation and retirement benefits expenses. We use the first two variables as proxies for current accruals (or working capital accruals) and the third variable as proxy for non-current accruals. The two components of accruals have both aspects of non-discretionary and discretionary nature. The model tries to separate non-discretionary portion from total accruals and uses residuals as discretionary accruals by regressing total accruals on the three variables. According to Dechow & Dichev (2002), current accruals are mostly positive since most firms are growing and increasing in their working capital while non-current accruals and total accruals are negative primarily because of depreciation.

The first explanatory variable, (DREV–DREC)/REV, represents changes in non-discretionary revenues because we subtract changes in receivables from changes in revenue. This variable should capture a firm's tendency to increase reported earnings by increasing the front-loading of credit sales. Front-loading of sales would tend to decrease this variable since it would not increase the numerator while simultaneously increasing the denominator. In other words, the change in cash sales should not be affected by the front-loading of credit sales.

The second explanatory variable, (DEXP–DPAY)/REV, represents changes in non-discretionary expenses. Management may utilize not only sales but also expenses in managing reported earnings. Hence, unless we properly take into account both sales changes and expense changes, we may not properly capture the dual aspects of current accruals. One of the major weaknesses of the MJ model is that the first variable does not have a predicted relationship with total accruals. Total accruals are expected to have a positive relationship with current accruals. However, it is difficult to predict the relationship that the changes in sales will have with total accruals. Sometimes, sales and receivables will be utilized to manage earnings, whereas in other times expenses and payables can be utilized for the same purpose. If we include the first variable only in our model, we may still capture the impact of expense changes on the current accruals because revenue changes and expense changes are correlated to a certain degree.[4]

The third variable associates non-cash expenses with non-current accruals. A non-discretionary level of non-cash expense is represented by the sum of depreciation expenses and retirement benefits expenses. When retirement benefits liabilities are less than fully funded which is the case for most of the Korean firms, the unfunded portion of the retirement benefits expenses are non-cash expenses. In the cash flow statements, this information is provided together with other non-cash expenses. By construction, the third variable will have a negative relationship with total accruals since non-cash expenses are subtracted from cash flows from operations to arrive at reported earnings.

We assert YM model is better than the MJ model for several reasons. First, YM model does not impose the intercept term to go through the origin while the MJ model does so by suppressing the intercept term.[5] Kothari et al. (2005) also point out that failure to include a constant magnifies misspecification of the MJ model. Second, as mentioned above, the YM model will capture the fact that firms tend to use not only revenues but also expenses in making accounting choices for earnings management. Third, the YM model better ensures a proper matching between the dependent variable and the independent variables since the YM model uses the flow variables for the independent variables as well as for the dependent variable. In contrast, the MJ model uses a level variable (Property, Plant &Equipment/Total Assets) to proxy for the non-current accrual.[6] Matching a level independent variable with the flow dependent variable is expected to lower the explanatory power of the level variable.

We used panel data in estimating the discretionary accruals to ensure statistical robustness. We combined the financial statements for the listed firms from the period of 1995 through 2001 to make the panel data. All the variables were electronically retrieved from the cash flow statements that are available from KIS-FAS, the Korean Compustat data set. We maintained as many firm-year observations as possible by winsorizing outliers instead of eliminating the respective firms. We also tried to keep the winsorization to a minimum level to maintain the characteristics of the original data.

Discretionary accruals are obtained by subtracting fitted values of accruals (non-discretionary accruals) from total accruals as follows:

$$DA_i = TA_i / REV_i - [b_0 + b_1 (DREV_i - DREC_i)/ REV_i + b_2 (DEXP_i - DPAY_i)/ REV_i + b_3 (DEP_i + PEN_i)/ REV_i] \quad (2)$$

Here, b_k represents the estimated coefficients of b_k in equation (1). The discretionary accruals (DA) obtained from the equation (2) represent the differences between actual total accruals and expected (non-discretionary) total accruals for each observation.

Estimation Results for Discretionary Accruals

We ran regressions for the YM model and the MJ model by industry for 32 two-digit industries. A total of 6,429 firm-year observations from the period of 1995 to 2001 were used to estimate the discretionary accruals. The data set used for the estimation of discretionary accruals is much larger than the sample data set (279 observations: 75 Kosdaq venture IPO firms, 133 Kosdaq non-venture IPO firms and 71 KSE IPO firms). The large data set helps ensure robust estimations for the discretionary accruals.

The number of observations used in the estimation for each industry ranges from a low of 28 for the Fishing industry to a high of 798 for the Electronics industry. The adjusted R^2 ranges from a low of 0.000 for the Film industry to a high of 0.683 for the Education and Business Support industry for the YM model. The adjusted R^2 for the 32 industries averages 0.237 for the YM model, a modest goodness of fit. However, the average adjusted R^2 for the MJ model is 0.042, which is much poorer than the YM model. Detailed explanations for the comparison of the two models are omitted here. Instead, the current study will briefly interpret the results of the YM model.

The explanatory variables for the YM model had expected signs with strong statistical significance in general. More specifically, the first variable, (DREV–DREC)/REV, generally had negative relationships with the total accruals. The proportions of negative coefficients for the first variable were 75% (24/32). 31% (10/32) were statistically significant at the 5% significance level. The second variable, (DEXP–DPAY)/REV, had predominantly positive relationships with total accruals. 78% (25/32) of the coefficients were statistically significantly positive at the 5% significance level. 94% (30/32) were positive. The third variable, (DEP+PEN)/REV, also had generally negative relationships with total accruals. The proportion of negative coefficient for the third variable was 63% (20/32). 28% (9/32) were statistically significant at the 5% significance level.

Test for Earnings Management

This study's test period covers 1996-2000 while the estimation for discretionary accruals uses seven-year data from 1995 to 2001. The discretionary accruals are estimated by running the regressions for the YM model and the MJ model by industry for 32 industries.

Two methods are used to test differences in earnings management practices between the Kosdaq venture IPO firms and the two control groups of IPO firms. First, the study uses difference tests for accruals. We do not expect that there will be a difference in average accruals between the Kosdaq venture IPO firms and the control sample firms unless they employ differential earnings management practices. Any systematic differences in accruals may be attributed to the differential listing requirements. We hypothesize that the Kosdaq venture IPO firms will have stronger incentives to manage earnings because of the differences in institutional arrangements of the IPO markets.

Second, the current study uses a graphic approach that is a similar method suggested by Burgstahler & Dichev (1997). The difference of our approach from Burgstahler & Dichev's lies in the fact that we use a histogram method while the other uses a scatter diagram method. This method presents a broader picture for earnings management practices by graphically portraying the average accruals across more narrowly classified cash flows from operations ('CFO' hereafter) portfolios. McNichols (2000) argues that the graphic

approach allows researchers to make a strong prediction about the frequency of earnings realizations that is unlikely to be due to the non-discretionary component of earnings.

For the graphic approach, we rank sample firms based on their standardized CFOs. We then form five equal size CFO portfolios. Mean accrual for each CFO portfolio for three comparative groups is presented in a histogram form. Systematic patterns of the differences for average accruals among three groups will suggest differential earnings management practices. We expect that the average accruals will show a monotonic decrease from the worst CFO quintile portfolio to the best CFO quintile portfolio, given the fact that the degree of earnings management practices hinges upon the level of CFO. In addition, we expect that the pattern for monotonic decreases for average accruals will be most salient for the Kosdaq venture IPO firms.

One advantage for the graphic approach is that this approach presents richer information about the distribution for average accruals across the different CFO portfolios. The mean difference method tests show only that the central tendency of accruals, i.e., the difference of the overall mean of accruals among three groups. In the mean difference test, any positive and negative deviations from the overall mean will cancel each other out. As a result, we may fail to see differences in discretionary accruals as long as the overall mean accruals are similar even if mean accruals for each CFO portfolio may exhibit significant differences across the CFO portfolios.

The graphic approach mitigates misspecification of regression approach in estimating discretionary accruals since the graphic approach provides a proper controlling for performance. Kothari et al. (2005) shows that a performance-matched accrual is useful in mitigating errors where researchers' partitioning variable is correlated with performance. Our graphic approach also controls performance. Performance matching can remove the portion of earnings management that is motivated by poor or superior performance since both treatment and control firms by design experience similar CFOs.

EMPIRICAL RESULTS

Descriptive Statistics

Table 1 reports the descriptive statistics for some key variables for the three year period surrounding the year of IPO in a comparative form for the Kosdaq venture firms, the Kosdaq non-venture firms and the KSE firms. We provide descriptive statistics for the alternative discretionary accruals (DA) based on the YM model and the MJ model. Furthermore, we also provide descriptive statistics for total accruals (TA), net income (NI) and cash flows from operations (CFO) using two different deflators of net sales and beginning total assets (BTA) for the sake of comparison. However, we will focus on the discretionary accruals in the analysis and interpretation of the empirical results for accruals. Panels A, B and C respectively show the descriptive statistics for those variables for one year before the IPO, the IPO year and one year after the IPO.

We get much wider ranges and standard deviations when BTA is used than when net sales are used as deflators. This is particularly the case for the Kosdaq venture firms in the year before IPO and the IPO year, for the Kosdaq non-venture firms in the year before IPO and the IPO year, and for the KSE firms in the IPO year. In the same vein, mean accruals (both total accruals and discretionary accruals), net income and cash flows from operations are more inflated when BTAs are used than when net sales are used as deflators, especially in the year before IPO and the IPO year.

Table 1: Descriptive Statistics[7]						
Panel A: One year before IPO						
Stock Exchange	Variables	Mean	Median	S.D.	Min.	Max.
Kosdaq Venture	DA-YM	0.0178	0.0033	0.1429	-0.3182	0.3969
(n_1=59)	DA-MJ	0.0637	0.0373	0.1929	-0.3498	0.6972
	TA/Sales	0.0590	0.0362	0.1285	-0.2356	0.5651
	TA/BTA	0.1109	0.0675	0.2443	-0.3330	0.8763
	NI/Sales	0.1074	0.0908	0.0822	-0.1004	0.3329
	NI/BTA	0.2104	0.1506	0.1855	-0.0789	0.7110
	CFO/Sales	0.0472	0.0397	0.1267	-0.4027	0.3094
	CFO/BTA	0.0882	0.0803	0.2560	-0.7752	0.7775
Kosdaq Non-venture	DA-YM	-0.0032	-0.0076	0.1415	-0.3256	0.6000
(n_2=124)	DA-MJ	-0.0134	-0.0230	0.1953	-0.6968	0.5576
	TA/Sales	0.0016	-0.0075	0.1205	-0.2351	0.5681
	TA/BTA	0.0111	-0.0165	0.2285	-0.0688	0.8761
	NI/Sales	0.0629	0.0460	0.0715	-0.2161	0.3399
	NI/BTA	0.1302	0.0788	0.1919	-0.8014	0.7166
	CFO/Sales	0.0620	0.0612	0.1317	-0.6000	0.4603
	CFO/BTA	0.1088	0.1040	0.2541	-0.7753	0.7778
KSE	DA-YM	0.0195	0.0121	0.0966	-0.2684	0.2988
(n_3=69)	DA-MJ	0.0212	0.0014	0.1178	-0.2501	0.3890
	TA/Sales	-0.0175	-0.0187	0.1015	-0.4024	0.2543
	TA/BTA	-0.0098	0.0014	0.1301	-0.3328	0.3735
	NI/Sales	0.0708	0.0541	0.0606	0.0060	0.2772
	NI/BTA	0.1045	0.0720	0.0991	0.0056	0.5443
	CFO/Sales	0.0860	0.0881	0.1106	-0.2353	0.3785
	CFO/BTA	0.1120	0.1154	0.1589	-0.3093	0.6850

Table 1: Descriptive Statistics[7]						
Panel B: IPO year						
Kosdaq Venture	DA-YM	0.1006	0.0844	0.1402	-0.2163	0.4903
(n_1=75)	DA-MJ	0.1792	0.0903	0.2639	-0.4362	0.9255
	TA/Sales	0.1114	0.0839	0.1528	-0.1923	0.5631
	TA/BTA	0.1928	0.0883	0.2659	-0.3514	0.8744
	NI/Sales	0.0917	0.0803	0.1058	-0.5179	0.3360
	NI/BTA	0.1509	0.1276	0.1880	-0.8016	0.7095
	CFO/Sales	-0.0194	-0.0154	0.1818	-0.5939	0.3592
	CFO/BTA	-0.0416	-0.0157	0.2787	-0.7747	0.7767
Kosdaq Non-venture	DA-YM	0.0224	0.0191	0.1320	-0.2577	0.2926
(n_2=133)	DA-MJ	0.0539	0.0033	0.1281	-0.1850	0.7404
	TA/Sales	0.0200	0.0022	0.1300	-0.4314	0.5671
	TA/BTA	0.0237	0.0071	0.1393	-0.3596	0.7137
	NI/Sales	0.0576	0.0518	0.0917	-0.6000	0.3430
	NI/BTA		0.0777	0.0531	0.0935	-0.2740
	CFO/Sales	0.0353	0.0519	0.1422	-0.6000	0.4614
	CFO/BTA	0.0539	0.0604	0.1417	-0.6541	0.4194
KSE	DA-YM	0.0419	0.0412	0.0817	-0.2007	0.2673
(n_3=71)	DA-MJ	0.0639	0.0400	0.2187	-0.7984	0.8584
	TA/Sales	0.0059	0.0084	0.0979	-0.3315	0.3264
	TA/BTA	0.0521	0.0203	0.2337	-0.7669	0.8735
	NI/Sales	0.0585	0.0460	0.0677	-0.2577	0.2926
	NI/BTA	0.1061	0.0933	0.1378	-0.6063	0.7105
	CFO/Sales	0.0525	0.0584	0.1011	-0.2992	0.3514
	CFO/BTA	0.0493	0.0201	0.2322	-0.7740	0.7777

Table 1: Descriptive Statistics[7]						
Panel C: One year after IPO						
Kosdaq Venture	DA-YM	-0.0162	0.0145	0.2402	-0.6000	0.6000
(n_1=59)	DA-MJ	-0.0427	-0.0310	0.2118	-0.7828	0.6846
	TA/Sales	-0.0644	-0.0345	0.2634	-0.6000	0.5691
	TA/BTA	-0.0462	-0.0298	0.2074	-0.7674	0.6104
	NI/Sales	-0.0418	0.0403	0.2430	-0.6000	0.2989
	NI/BTA	-0.0130	0.0406	0.1959	-0.8015	0.1987
	CFO/Sales	0.0070	0.0516	0.2227	-0.6000	0.4534
	CFO/BTA	0.0324	0.0536	0.1585	-0.4981	0.3990
Kosdaq Non-venture	DA-YM	0.0254	0.0251	0.1587	-0.6000	0.5402
(n_2=124)	DA-MJ	0.0085	-0.0058	0.1687	-0.6954	0.7172
	TA/Sales	-0.0269	-0.0297	0.1737	-0.6000	0.5711
	TA/BTA	-0.0086	-0.0214	0.1694	-0.7670	0.6801
	NI/Sales	-0.0055	0.0264	0.1556	-0.6000	0.3340
	NI/BTA	0.0196	0.0389	0.1507	-0.7934	0.5002
	CFO/Sales	0.0121	0.0476	0.1681	-0.6000	0.4219
	CFO/BTA	0.0281	0.0431	0.1511	-0.4886	0.3877
KSE	DA-YM	0.0501	0.0475	0.1273	-0.2372	0.6000
(n_3=69)	DA-MJ	0.0134	0.0200	0.1158	-0.4252	0.2560
	TA/Sales	-0.0146	-0.0101	0.1147	-0.2705	0.3175
	TA/BTA	-0.0148	-0.0090	0.1211	-0.4398	0.2283
	NI/Sales	0.0236	0.0414	0.1223	-0.6000	0.2985
	NI/BTA	0.0390	0.0373	0.0870	-0.2244	0.3278
	CFO/Sales	0.0392	0.0530	0.1497	-0.5420	0.2946
	CFO/BTA	0.0553	0.0428	0.1344	-0.2366	0.5553

Note 1) All variables are deflated by the same period net sales or beginning total assets (BTA).
Note 2) TA= Total accruals, DA = Discretionary accruals, NI = Net income, CFO = Cash flows from operations
Note 3) DA-YM represents DA from the YM model and DA-MJ from the MJ model.

DA averages 0.0178 for the YM model (0.0637 for the MJ model) for the Kosdaq venture firms in the year before IPO. Average DAs for the two control samples are -0.0032 (-0.0134) for the Kosdaq non-venture firms and 0.0195 (0.0212) for the KSE firms during the same period.

We can also observe that TA is negatively related to CFO so that NI is the highest for the Kosdaq venture firms at 0.1074 (0.2104) while its CFO is the lowest at 0.0472 (0.0882) among the three groups. This may indicate that the Kosdaq venture firms tend to increase reported earnings more aggressively than their counterparts when they prepare to go public in the following year.

Panel B shows that DA for the Kosdaq venture firms (0.1006 and 0.1792) is much larger than those of the control groups (0.0224 and 0.0539 for the Kosdaq non-venture and 0.0419 and 0.0639 for the KSE). Shown in Panel B is that CFO is the lowest and yet NI is the highest for the Kosdaq venture firms in the IPO year. This indicates that the Kosdaq venture firms tend to manage earnings heavily in the IPO year as well.

Panel C reveals that DA (-0.0162 and -0.0427) and NI (-0.0418 and -0.0130) for the Kosdaq venture firms is lowered drastically as compared to the previous two years. NI is also lower as compared to the two control samples. Perhaps the Kosdaq venture firms might have exhausted accruals to increase their NI in the year preceding IPO and in the IPO year. As a result, NI decreases drastically in the year following IPO.

Results for Mean Difference Tests

Table 2 reports the results for the difference tests between the Kosdaq IPO firms and the KSE IPO firms for discretionary accruals (DA) and total accruals (TA) as well. The mean difference tests for TA support H1 that the Kosdaq IPO firms tend to manage earnings more aggressively than its KSE counterparts in the year preceding IPO and in the IPO year. However, the same test for DA by and large fails to support H1 except for the MJ model in the IPO year. The lack of statistical significance for DA may be related to the possible misspecification of the DA estimation. However, the lack of statistical significance may be more likely related to the fact that the Kosdaq non-venture firms are not significantly different from the KSE firms in terms of major firm characteristics, maybe with the exception of firm size. Since we get inconsistent evidence from the two different accruals, we are not warranted to conclude that the Kosdaq firms employ more aggressive earnings management strategies in the year preceding IPO.

Table 3 reports the results for the mean accrual difference test between the Kosdaq venture IPO firms and the Kosdaq non-venture IPO firms. Table 5 reveals that the Kosdaq venture firms increase reported earnings more aggressively than the Kosdaq non-venture firms, definitely in the IPO year and probably in the year preceding IPO. Statistically significant differences are evidenced by both DA and DA in the IPO year and by TA and DA from the MJ model in the preceding year. In conjunction with the results reported in Table 2, we can document that most of the accrual differences between the Kosdaq IPO firms and the KSE IPO firms come from the aggressive earnings management practices by the Kosdaq venture IPO firms. We can observe that the magnitudes for DA and TA for the Kosdaq venture IPO firms in the IPO year are many times of those of the Kosdaq non-venture IPO firms. These results clearly indicate that the Kosdaq venture firms tend to increase reported earnings very aggressively in the IPO year and also probably so in the year preceding IPO. The results, hence, support the H2 that the Kosdaq venture firms manage earnings more aggressively than their Kosdaq non-venture counterparts when they go public. The clear differences in earnings management practices of IPO firms within the market seem to be driven primarily by the differences in listing regulations.

Table 2: Results for Mean Difference Tests between Kosdaq IPO Firms and KSE IPO Firms

Variables	DA Model/Deflator	Year	Kosdaq	KSE	t-ratios	p-levels
DA	YM Model	-1	0.0040	0.0195	-0.987	0.325
		0	0.0506	0.0420	0.629	0.530
		+1	0.0037	0.0501	-2.146	0.033
	MJ Model	-1	0.0114	0.0212	-0.481	0.631
		0	0.1055	0.0539	2.279	0.024
		+1	-0.0095	0.0134	-1.204	0.230
TA	Sales	-1	0.0201	-0.0175	2.140	0.034
		0	0.0529	0.0060	3.050	0.003
		+1	-0.0648	-0.0146	-2.013	0.045
	BTA	-1	0.0433	-0.0098	2.255	0.025
		0	0.1028	0.0237	3.274	0.001
		+1	-0.0218	-0.0148	-0.363	0.717

Note) DA = Discretionary accruals, TA= Total accruals, YM model = Yoon and Miller model; MJ model = Modified Jones Model,
BTA = Beginning total assets

Table 3: Results for Mean Difference Tests between the Kosdaq Venture IPO Firms and the Kosdaq Non-venture IPO Firms

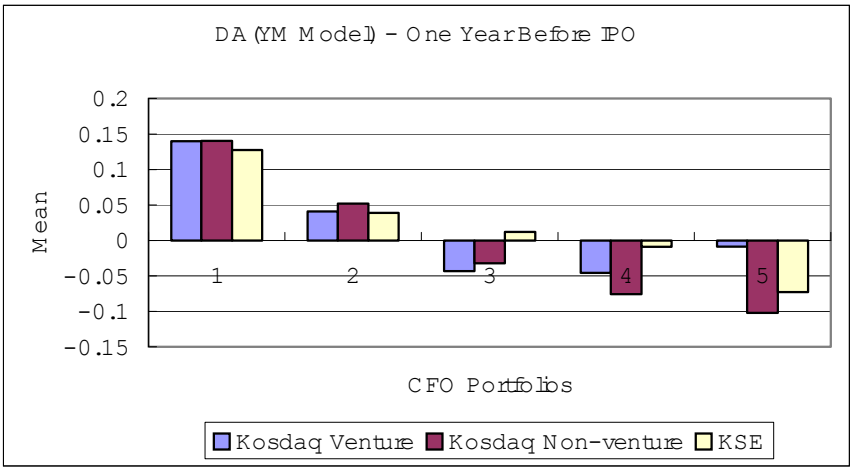
Variables	DA Model/Deflator	Year	Venture	Non-venture	t-ratios	p-levels
DA	YM Model	-1	0.0178	-0.0026	0.901	0.368
		0	0.1006	0.0224	3.946	0.000
		+1	-0.0324	0.0232	-1.497	0.136
	MJ Model	-1	0.0637	-0.0191	2.616	0.010
		0	0.1792	0.0639	3.214	0.002
		+1	-0.0427	0.0085	-1.768	0.080
TA	Sales	-1	0.0590	0.0016	2.880	0.004
		0	0.1114	0.0200	4.363	0.000
		+1	-0.1098	-0.0404	-1.389	0.166
	BTA	-1	0.1109	0.0054	2.751	0.007
		0	0.1928	0.0521	3.825	0.000
		+1	-0.0462	-0.0086	-1.320	0.189

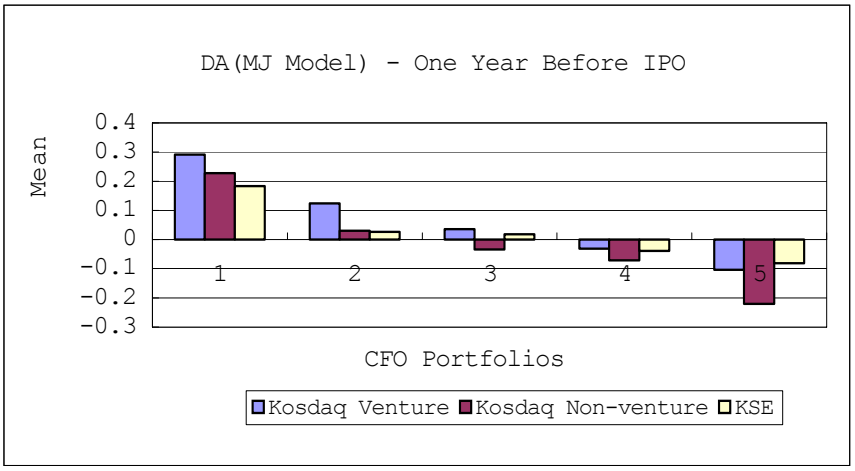
Note) DA = Discretionary accruals, TA= Total accruals, YM model = Yoon and Miller model; MJ model = Modified Jones Model,
BTA = Beginning total assets

Additional tests for the accrual differences in the three years surrounding the IPO year between the Kosdaq non-venture IPO firms and the KSE IPO firms (which is not shown in tabular form) revealed that the differences are not statistically significant. This indicates once again that the Kosdaq venture firms manage earnings much more aggressively than their counterparts of the Kosdaq non-venture IPO firms or the KSE IPO firms.

Graphic Approach

Figure 1
Comparison of Discretionary Accruals - One year before IPO





Note) Portfolio 1 represents the bottom quintile CFO firms and Portfolio 5 the top quintile CFO firms.

The mean difference tests focus on the differences in the central tendency for the treatment sample (the Kosdaq venture IPO firms) and the control samples (the Kosdaq non-venture IPO firms and the KSE IPO firms). The mean difference test is related to a point estimate. Therefore, any deviations from the mean may cancel each other out so that the test may fail to show rich distributional characteristics. However, with the graphic approach we are using, each sample for each year (the preceding year, the IPO year and the following year) is divided into five equal size portfolios that are formed based on CFO. A clear advantage for the graphic approach over the mean difference tests is that the approach presents richer information about the distribution for average accruals across the different CFO portfolios.

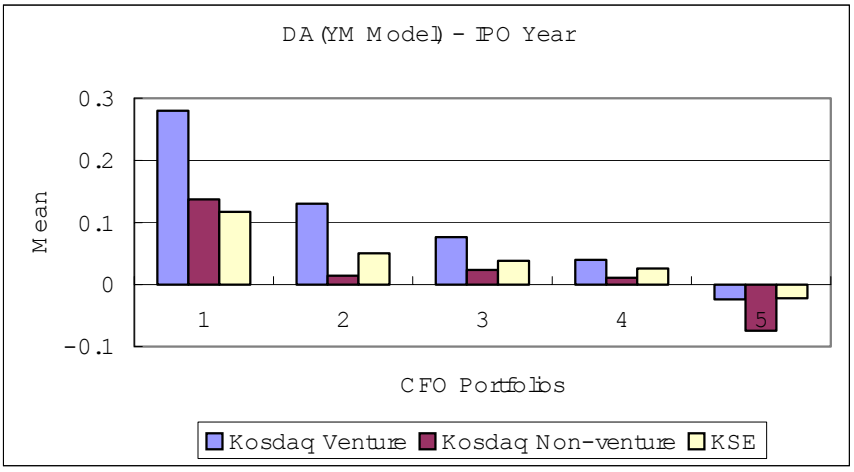
Figures 1 through 3 show the average DA for each CFO portfolio, one for each year.[8] The first thing we can notice from the comparison of graphs is that the DA estimation approaches, even though they are different in terms of design and results, does not affect the empirical results very differently. The YM model has lower range of DA between the minimum and the maximum values than the MJ model. However, the overall pictures of the two different approaches show very similar patterns.

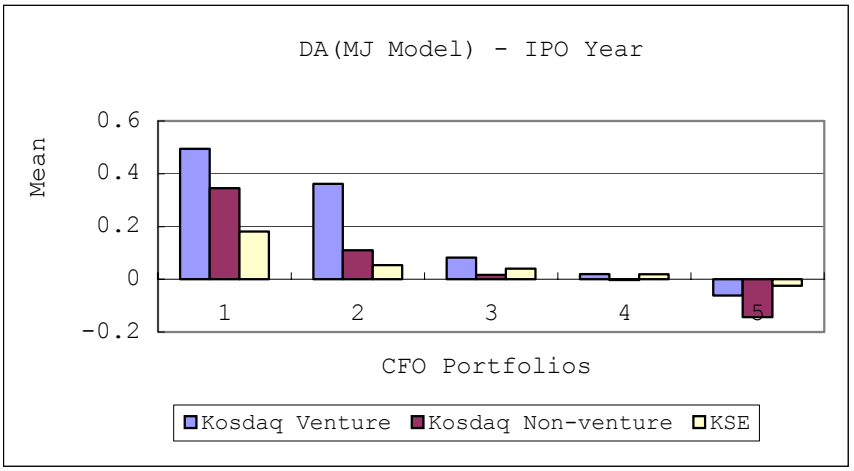
Figure 1 and Figure 2 reveal that firms in general tend to incur accruals in the opposite directions of CFO. The relationships are generally monotonically negative. We observe that the average DA across the CFO portfolios decreases gradually. Therefore, accruals and CFOs are strongly negatively correlated. We don't expect that there should be negative relationships if firms do not manage earnings. For example, firms in the bottom quintile portfolio (Portfolio 1) have negative CFO and hence employ high accrual strategies. This is consistent with the findings of Yoon & Miller (2002b) and Kothari et al. (2005). While we fail to find any systematic differences in DA among the three IPO groups in the preceding years from the YM model, we find more pronounced differences in DA from the MJ model.[9]

Given the general tendency of negative relationships between accruals and CFOs, we observe from Figure 2 that the Kosdaq venture firms tend to employ more aggressive earnings management strategies in the IPO year. The average DA for each of the five CFO portfolios is consistently the highest for the Kosdaq venture firms among the three groups in the IPO year. The average DA is as high as 0.280 for the YM model and 0.495 for the MJ model for the bottom quintile CFO portfolio in the IPO year. In comparison, the average DA for the bottom quintile CFO portfolio in the IPO year is 0.137 for the YM model and 0.345 for the MJ model for the Kosdaq non-venture firms and 0.117 and 0.181 respectively for the KSE firms. We can infer that the degree of earnings management practices is non-trivial for all three groups when CFO is poor, and that earnings management practices appear to be the most significant for the Kosdaq venture firms.

Figure 3, however, indicates that the earnings management practices are not consistently related to CFO in the year following IPOs. The Kosdaq venture firms which implemented aggressive earnings management strategies in the IPO year don't appear to employ income-increasing strategies in the following year. For the Kosdaq venture firms, the average accruals are mostly negative. In contrast, the average accruals for the Kosdaq non-venture firms and the KSE firms do not show significant changes from the previous years.

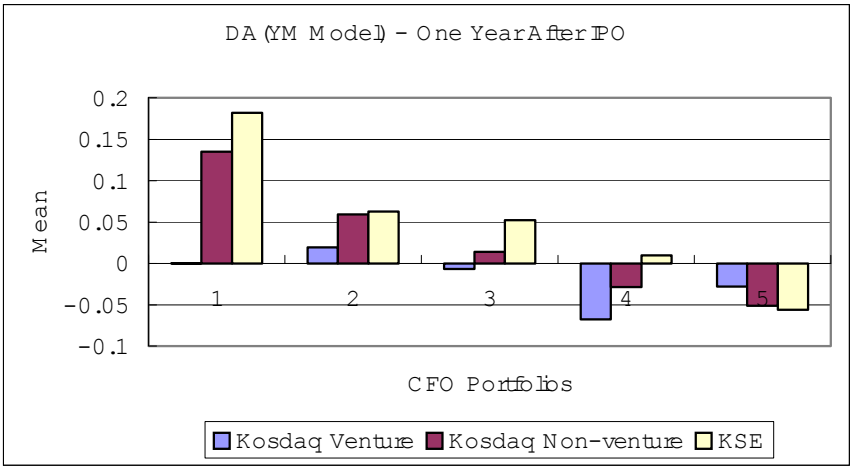
Figure 2
Comparison of Discretionary Accruals-IPO Year

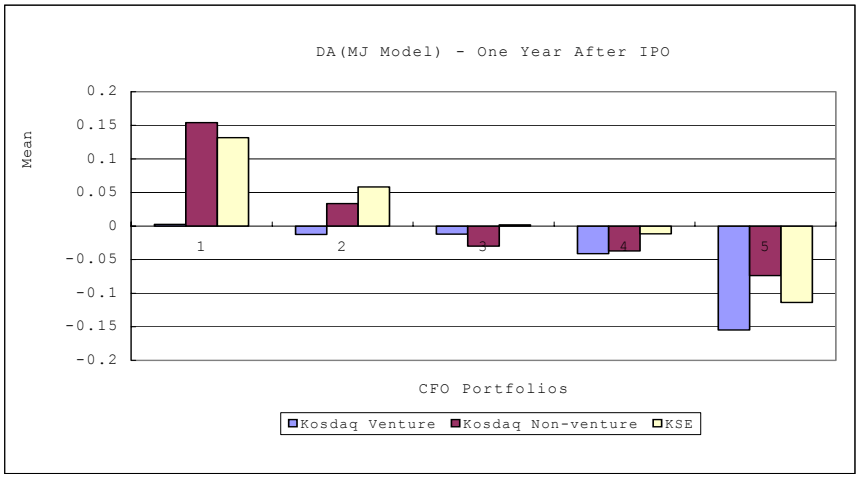




Note) Portfolio 1 represents the bottom quintile CFO firms and Portfolio 5 the top quintile CFO firms.

Figure 3
Comparison of Discretionary Accruals - One year after IPO





Note) Portfolio 1 represents the bottom quintile CFO firms and Portfolio 5 the top quintile CFO firms.

One possible reason for the turn-around in accounting strategies is that the Kosdaq venture firms might have exhausted all possible means for managing earnings in the IPO year. Another reason may be that the venture firms no longer need to manage earnings to maintain the stock prices at a certain level. As discussed earlier, IPO firms and underwriters are normally expected to manage prices for newly issued shares for a sustained period of time up to three months after the IPO. Furthermore, shareholders are not allowed to sell their respective stocks until six months after the initial public offerings.

CONCLUSIONS

We expect that firms going public will have incentives to manage earnings to make sure that they pass the specific listing requirements. Also, firms hope to sell out their IPO shares at good prices. Two stock exchanges, the Kosdaq exchange and the Korea Stock Exchange (KSE), with differential listing regulations are available for would-be public firms to self-select their initial public offerings. If a firm is qualified as a venture firm, then the firm can choose the Kosdaq venture listing alternative, for which the listing regulations are even more lenient than the Kosdaq non-venture firms within the same Kosdaq exchange. The differential listing regulations will encourage firms to choose the stock exchange that is most advantageous for them. These less strict listing regulations for the venture firms may induce the firms to manage earnings aggressively. The study examined the earnings management practices for the Kosdaq venture IPO firms in comparison to the Kosdaq non-venture IPO firms and the KSE IPO firms during the period 1996 to 2000.

We selected a treatment sample of 75 Kosdaq venture IPO firms and two control samples of 133 Kosdaq non-venture IPO firms and 71 KSE IPO firms during the five year period. The study tested the accrual differences between the treatment sample and the control samples. The study also used a graphic analysis approach to investigate the differences in earnings management practices for the Kosdaq venture IPO firms and the two control samples.

The results for the tests consistently reveal that the Kosdaq venture IPO firms employ more aggressive earnings management practices than the two control samples in the IPO year and probably in the preceding year as well. However, the Kosdaq venture firms drastically reduce accruals and report relatively lower earnings in the year following the IPOs.

The graphic approaches for accruals also reveal that the Kosdaq venture firms employ more aggressive earnings management practices in the IPO year. In addition, the graphic approach shows that the degree of earnings management practices depend very strongly on the cash from operations in a monotonically negative manner.

The current study suffers from possible misspecification problems for the discretionary accrual estimation. Even though we used two alternative models in estimating discretionary accruals, the goodness of fit is still far from satisfaction. Future research needs to develop a more refined and better fitting model.

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ENDNOTES

1. The Korea Stock Exchange, the Kosdaq Market and the Korea Futures Exchange have been merged into the Korea Exchange (KRX) in January 2005. However, the KRX is still divided into three divisions and the operation system of individual divisions is still the same as before. On the other hand, the operation system of the KRX is virtually same as other stock exchanges like NYSE in terms of disclosure regulation, listing procedures and other policies. Furthermore, Korean accounting standards are very much similar to those of IASB and/or the FASB thanks to the increased efforts for the convergence of international standards. Since our study's main objective is to compare earnings management of IPO firms in differential listing requirements,

we will not elaborate on the operational and institutional features in detail. Detailed information on the disclosures, listing procedure, and other operation system of the KRX can be obtained from www.krx.co.kr.

2. In order to be listed on the KSE, an IPO firm must satisfy the following requirements: It should get a public auditor designated by the Financial Supervisory Service before going public; It should be at least three year old; It should have an equity greater than 5 billion Won (about $5 million) or sales greater than 20 billion Won (about $20 million); It should have an unqualified audit opinion; It should have no material pending lawsuits; It should have a debt ratio less than 1.5 times the industry average; and it should have a return on equity higher than 10%.

3. Firms with total assets greater than 50 billion Won (about $50 million) or stockholders' equity greater than 10 billion Won (about $10 million) can be listed even if they experience net losses. Firms with paid-in-capital greater than 0.5 billion Won (about $0.5 million) can be listed as long as income from continuing operations is positive. Firms with qualified audit opinion can also be listed.

4. We may have a multicollinearity problem when we include explanatory variables that are correlated. We need to take into account the trade-off between the adverse effect of multicollinearity and the problems of omitted variables in this case. Changes in revenues and changes in expenses are highly correlated. However, the correlation between changes in non-discretionary revenues and changes in non-discretionary expenses decreased significantly. Furthermore, when we use both of the variables, we get significant and consistent signs for both of the variables from the regressions (Yoon & Miller, 2002a).

5. The MJ model uses the inverse of firm size (1/beginning total assets) to proxy for the intercept and does not allow a free intercept term. This will lower the goodness of fit of the model. Using our sample, we find out that the adjusted R^2 on average drops from 0.082 to 0.042. The marked difference in adjusted R^2 between the suppressed and unsuppressed constant terms alone indicates how serious the misspecification problem is for the MJ model.

6. For some aged capital intensive firms, this variable becomes greater than one when property plant and equipment is fully or nearly fully depreciated. In this unusual case, the variable distorts the expected negative relationship between total accruals and non-current accruals.

7. TA should be equal to NI less CFO by definition. However, the relationship is slightly distorted by the fact that some variables are winsorized as a way to adjust for the outliers.

8. For the graphic approach, we report only discretionary accruals. The graphic analysis of total accruals shows stronger support of the earnings management hypothesis of the Kosdaq venture firms than the discretionary accruals.

9. For both the YM model and the MJ model, IPO year differences in discretionary accruals are statistically significant for the portfolios 1 though 3 between the Kosdaq venture firms and the Kosdaq non-venture firms, and for the first two portfolios between the Kosdaq venture and the KSE firms. In the year preceding IPO, discretionary accruals from the modified Jones model are also statistically different for portfolios 2 and 5 between the Kosdaq venture firms and the Kosdaq non-venture firms as well as for portfolio 2 between the Kosdaq venture firms and the KSE firms. In the following year, discretionary accruals from the modified Jones model is statistically significantly lower for the Kosdaq firms than for the KSE firms for portfolio 2 only. In sum, the Kosdaq venture firms tend to increase reported earnings more aggressively than the Kosdaq non-venture firms and the KSE firms when operating cash flows are poor in the IPO year and the preceding year.

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INFLUENCE OF BUSINESS RISK ASSESSMENT ON AUDITORS' PLANNED AUDIT PROCEDURES

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ABSTRACT

Each of the big-four audit firms requires auditors to assess business risk early in the audit engagement. To meet the rigorous new and revised standards issued by the PCAOB, auditors are increasingly required to link business risk to classes of transactions, account balances and to the financial statement assertions affected. This study examines the influence of business risk assessments on the auditor's identification of significant financial statement assertions and planned audit procedures. We further examine the extent to which business risk influences the auditor's assessment of the likelihood of a material error in the financial statement. We examine these research questions using data from a laboratory experiment with audit seniors and managers from three big-four audit firms and three regional audit firms as subjects. The results indicate that auditors' assessment of relevant financial statement assertions is affected by the level of business risk. Furthermore, auditors change audit procedures when risk factors are present. This study contributes to the literature by examining the effect of business risk on audit planning.

INTRODUCTION

This study examines the influence of business risk on the auditor's identification of significant financial statement assertions and planned audit procedures. We further examine the influence of business risk on the auditor's assessment of the likelihood of a material error in the financial statements.

In an effort to improve the effectiveness of the audit by better understanding client business risk, audit firms reengineered their audit methodologies to focus the auditor's attention on the business risks in the organization whose financial statements are being audited (Eilifsen, Knechel, & Wallage, 2001; Higson, 1997). This audit methodology has been associated with changes in the scope of the planning and risk assessment processes and in the related evidence gathering procedures used by auditors to improve the effectiveness of the audit by better understanding client business risk.

To meet the rigorous new and revised standards issued by the PCAOB auditors are increasingly required to link business risk to classes of transactions, account balances and to the financial statement assertions affected. However, while auditors are required to make business risk assessments in the planning phase of each audit, research examining the effect of business risk assessments on audit judgment is limited.

In this study we examine the impact of business risk on the auditor's identification of significant financial statement assertions and planned audit procedures. We also examine the effect of business risk on the auditor's assessment of the likelihood of a material error in the financial statements. We examine these research questions using data from a laboratory experiment. To test the hypothesis that auditors change audit

procedures in response to business risk, we provide each subject with a statement of risk, and a statement of risk with an additional environmental issue (condition from within the entity's internal environment, industry, and/or macro-economic factor associated with the entity's survival and profitability) that will enhance business risk. Subjects provided audit procedures for each risk. The results indicate that auditors' assessment of relevant financial statement assertions is affected by business risk. Furthermore, auditors change audit procedures when risk factors are present. This study contributes to the literature by examining the effect of business risk on audit planning.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Business Risk

This study examines the impact of the assessment of business risk on the auditor's choice of audit procedure. Business risk is generally defined as the risk that an entity's business objective will not be attained as a result of the external and internal factors, pressures, and forces brought to bear on the entity and ultimately, the risk associated with the entity's survival and profitability (Bell, Marrs, Solomon, & Thomas, 1997). Business risks arise from conditions and forces within the organization's internal environment, industry forces and macro-environmental forces. An understanding of business risk widens the focus of the auditor, from audit risk, defined with reference to financial statement error, to business risk, defined as the risk that an entity will fail to meet its objectives (Eilifsen et al, 2001; Higson, 1997). Business risk ultimately translates into the risk of financial statement error. Therefore, an approach which focuses on understanding a business, its environment and business processes provides the best means by which an auditor will recognize risks associated with management fraud and business failure (Erickson, Mayhew, & Felix, 2000).

Audit Planning and Account-Specific Risk

Prior research has considered the impact of account-specific audit risk on evidential audit planning. There is some evidence that auditors adjust evidential planning for inherent and control risks (Mock & Wright, 1993 and 1999). In an archival study Mock and Wright (1999) examine risk assessment and audit planning based on data from actual audit engagements. The authors examined account-specific risk factors. Mock and Wright gathered data on risk assessments and evidential plans in the accounts receivable area from the working papers of 74 randomly selected manufacturing clients. Mock and Wright conclude that audit program plans are not clearly related to risk across a broad spectrum of risk scenarios. Mock and Wright (1999) corroborated and extended the archival study by Mock and Wright (1993) by considering additional audit risk factors and expanding the study to include a sample of engagements to include audits in a more recent time period. The results of both studies indicate a lack of a strong relationship between account-specific client risks and audit programs.

Audit Planning and Business Risk

The shift from a financial statement risk approach to a business risk approach is predicated on auditors changing audit procedures with respect to identified business risks. However, given the prior

evidence regarding a weak linkage between account-specific risk factors and audit program plans (Mock & Wright, 1993 and 1999), the maintained hypothesis that auditors change plans in response to business risk needs to be empirically validated. While prior research has focused on risks associated with receivables, payables and similar accounts, this study focuses on the risks associated with achievement of business objectives that are generally classed as business risk.

Prior literature (O'Donnell & Schultz, 2005) suggests that the holistic perspective that auditors acquire in making business risk assessments influences their judgments by altering the auditor's tolerance for changes in accounts that are inconsistent with information about client operations. Assessing business risk provides the auditor with a rich context for evaluating audit evidence (Bell et al, 1997). Auditors that use an audit methodology that requires a business risk assessment use this assessment as a first step for assessing audit risks. This suggests that auditors utilizing a business risk audit methodology may lead the auditor to view business risk as an indication of possible misstatement in the financial statements. Furthermore, the auditor's assessment of business risk seeks to address the internal and external factors, pressures and forces brought to bear on the entity and ultimately, the risk associated with the entity's survival and profitability (enhanced environmental factors).

H1: Auditors assess the likelihood of material misstatement as higher when a given business risk is accompanied by enhanced environment factors than when it is not accompanied by such factors.

In examining changes in audit plans in response to business risk, this study considers three specific aspects of audit planning: selection of the most relevant assertion, the change in audit procedure and the assessment of the likelihood of a material misstatement in the financial statements. Bell et al. (1997) argue that an auditor using a business risk approach needs to gain an understanding of the client's operating environment. In this study we ask the auditor to select the most relevant audit procedure for an area of business risk given no accompanying environmental risk factor, and the same risk when accompanied by environmental factors likely to enhance the level of business risk. To meet the rigorous new and revised standards issued by the PCAOB auditors are increasingly required to link business risk to classes of transactions, account balances and to the financial statement assertions affected. Our hypotheses focus on the change in audit procedures and identification of significant financial statement assertions.

H2: Auditors assess the likelihood that planned audit procedures will detect material error in financial statements as lower when a given business risk is accompanied by enhanced environmental factors compared to the same risk when it is not accompanied by such factors.

H3: Auditors' link business risk to the financial statement assertions affected.

H4: Auditors change audit procedures when a given business risk is accompanied by enhanced environmental factors compared to the same risk when it is not accompanied by such factors.

METHODOLOGY

We examine the research question using data from a laboratory experiment. To test the maintained hypothesis that auditors change audit procedures in response to business risk, each subject was provided with a statement of risk, and a statement of risk with an additional environmental issue that enhanced the business risk. Audit procedures and financial statement assertions were collected for each risk. The statistical analysis is a within- subjects comparison.

The participants in the study were 30 audit seniors and managers from three big-four and three regional accounting firms. The participants are in a position to reflect the practice at senior levels in large firms. The participants in the study have an average of 5 years of audit experience. Each subject was given a survey instrument that consisted of two cases. Each case contained statements of risk paired with the same risk accompanied by environmental risk factors. In the experimental task each participant was provided a series of risks and asked to identify the most relevant assertion and audit procedure (ranking from most to least important). The business risk factors were obtained from audit firm materials from a big-four audit firm, audit cases and discussions with an audit partner (see Appendix). Each risk is then linked to an environmental factor that would enhance the level of business risk and the auditor is asked to identify the most relevant assertion and audit procedure (ranking from most important to least important). The change in audit procedure and relevant assertion is assessed as the change in audit procedure and assertion with the addition of an environmental factor related to business risk. Following the ranking of the most relevant financial statement assertion and audit procedures for each business risk, auditors were asked to provide an assessment of the likelihood of material error in the financial statements. Auditors were asked to provide additional demographic information capturing industry experience, audit experience, and audit methodology used. (Despite the subjects being drawn from a limited set of audit firms there was still a range of responses regarding their audit methodology reflecting individual variation in audit approach.)

RESULTS

The first test of the survey results examine support for H1 and H2 to determine whether the auditors' judgments with respect to the mean likelihood of material errors in the financial statements and the ability of planned auditor procedures to detect material errors in the financial statements vary between the risk scenarios. The results are presented in Table 1. Panel A shows mean assessments regarding the likelihood of a material error in the financial statements given the business risk paired with the mean likelihood error assessment for the enhanced risk for the four scenarios. Panel B shows mean paired assessments regarding the likelihood that the planned audit procedure would detect a material error in the financial statements. In Panel A, for scenarios 1-3 the auditors assessed the likelihood of a material error in the financial statements as higher for the scenarios enhanced risk relative to the base scenario. In the 4th pairing in Panel A, this was not the case, as the auditors rate the likelihood of a material error in the financial statements as lower given the enhanced risk. The auditors are less consistent in judging whether the planned audit procedures are likely to detect material errors in the base scenario relative to the enhanced scenario. In Panel B, for scenarios 1 and 2, the auditors judge that it is more likely that the planned auditor procedures will detect material errors in the base scenario, while in scenarios 3 and 4 the likelihood of error detection using planned procedures is higher for the enhanced risk scenarios.

TABLE 1: Paired Sample Mean DESCRIPTIVE Statistics			
N= 30		Mean	Standard Deviation
Panel A: Likelihood of a material error in the financial statements (1-low risk to 10-high risk)			
Pair 1	t1s1error	6.93	1.60
	t1s2error	7.47	1.41
Pair 2	t1s3error	5.93	1.87
	t1s4error	6.77	1.70
Pair 3	t2s1error	6.57	1.79
	t2s2error	6.60	1.63
Pair 4	t2s3error	6.60	1.75
	t2s4error	6.47	1.76
Panel B: Likelihood that planned audit procedures will detect a material error in the financial statements (1-not likely to 10-likely)			
Pair 5	t1s1proc	7.10	1.73
	t1s2proc	6.87	1.72
Pair 6	t1s3proc	7.40	1.57
	t1s4proc	7.30	1.78
Pair 7	t2s1proc	6.60	1.81
	t2s2proc	6.83	1.68
Pair 8	t2s3proc	6.97	1.47
	t2s4proc	7.00	1.64
t1s1 – Finance group-Base complex financial instrument risk t1s2- Finance group-Enhanced complex financial instrument risk t1s3- Finance group-Base risk of ineffective tax planning t1s4- Finance group-Enhanced tax risk with changes in tax laws		t2s1- Retail group-Base risk management scenario t2s2- Retail group, Enhanced risk management scenario t2s3- Retail group, Base cash flow inadequacy risk t2s4- Retail group, Enhanced cash flow inadequacy risk	

A matched pair comparison t-test (comparing means) was used to determine whether the differences noted in Table 1 are statistically significant. Table 2 summarizes the results. A paired sample t-test of the mean differences for the Panel A pairs show statistically significant differences for the material likelihood assessments for Scenario 1 (p is .013) and Scenario 2 (p. is .006). However, the paired t-tests in Table 2 show that none of the differences in mean likelihood assessments regarding the error-detection efficacy of the planned audit procedures is statistically significant.

The mean difference results offer mixed support for H1. The initial investigation of the auditor mean error assessments suggest that in certain audit environments auditors recognize the effects that enhanced

environment risk may have on the likelihood of errors in the financial statements. In half of the scenarios tested the auditors' perceived, in statistically significant magnitudes, that the enhanced risk factors could lead to a greater likelihood of financial statement error relative to the base scenario. However, the fact that the auditors did not assess differences of a statistical magnitude for Scenarios 3 and 4 cannot necessarily be interpreted as auditors not recognizing the implications of environmental audit risks. The failure to assess an error likelihood difference in these scenarios could be a lack of realism or saliency in the base and enhanced scenarios presented for evaluation in this experiment. Also, the subject area of the scenarios could be driving the results. For example, in the cash flow scenario auditors may perceive that errors due to cash flows in the enhanced scenario are not more likely given that cash flows are, by nature, not easily manipulatable.

TABLE 2: Paired Mean Difference Tests

df=29		Mean	Std. Deviation	t	Sig. (2-tailed)
Pair 1	t1s1error - t1s2error	-.5333	1.106	-2.641	.013
Pair 2	t1s3error - t1s4error	-.8333	1.555	-2.934	.006
Pair 3	t2s1error - t2s2error	-.0333	1.245	-.147	.884
Pair 4	t2s3error - t2s4error	.1333	1.502	.486	.631
Pair 5	t1s1proc - t1s2proc	.2333	.935	1.366	.182
Pair 6	t1s3proc - t1s4proc	.1000	1.029	.532	.599
Pair 7	t2s1proc - t2s2proc	-.2333	1.524	-.839	.409
Pair 8	t2s3proc - t2s4proc	-.0333	1.033	-.177	.861

t1s1 – Finance group-Base complex financial instrument risk
t1s2- Finance group-Enhanced complex financial instrument risk
t1s3- Finance group-Base risk of ineffective tax planning
t1s4- Finance group-Enhanced tax risk with changes in tax laws
t2s1-Retail group-Base risk management scenario
t2s2-Retail group, Enhanced risk management scenario
t2s3-Retail group, Base cash flow inadequacy risk
t2s4- Retail group, Enhanced cash flow inadequacy risk

The second hypothesis states that auditors will assess as lower the likelihood that planned audit procedures will detect material errors in financial statements when a given business risk is accompanied by enhanced environmental factors compared to the same risk when it is not accompanied by such factors. The experimental results do not provide support for this hypothesis. The differences of the auditors' assessments regarding the impact of planned audit procedures on material errors between the base and enhanced scenarios did not test as statistically significant. Perhaps the auditors believe that appropriately applied audit procedures would be effective in either scenario. The lack of paired differences relative to the audit procedure efficacy could also reflect inadequacies of the survey instrument. Conceivably, the auditors could prefer procedures not available in the provided scenario and such preferences, if extant, could influence the auditor's perceptions that the planned procedures would detect errors, in either the base or enhanced scenario.

The survey responses also allow scrutiny of how auditors' ranked importance of financial statement assertions vary across audit risk scenarios (H3). Table 3 summarizes the auditors' rankings of the importance of financial statement assertions for each of the four base and paired enhanced risk scenarios. To enhance clarity and readability each panel (A-D) shows truncated ranking results revealing only the first and second assertions ranked in each comparative scenario.

TABLE 3: FREQUENCY COUNTS SHOWING AUDITORS' RANKED IMPORTANCE OF FINANCIAL STATEMENT ASSERTIONS

T1S1	**PANEL A**	**COMPLEX FINANCIAL INSTRUMENTS**					
Assertions		COMPLETENESS	EXISTENCE	ACCURACY	VALUATION	RIGHTS & OBLIGATIONS	PRESENTATION & DISCLOSURE
SBR1	Assertions Ranked						
	1	0	10	1	18	2	0
	2	3	10	3	6	3	6
T1S2		**COMPLEX FINANCIAL INSTRUMENTS WITH VOLATILITY AND POOR PERFORMANCE OF THE EQUITY MARKETS MAY INCREASE MARKET RISK AND LEAD TO SIGNIFICANT LOSSES**					
Assertions		COMPLETENESS	EXISTENCE	ACCURACY	VALUATION	RIGHTS & OBLIGATIONS	PRESENTATION & DISCLOSURE
SBR2							
	1	1	3	3	22	2	0
	2	3	9	5	5	1	8
T1S3	**PANEL B**	**INEFFECTIVE TAX PLANNING. TAX RESERVE IS INADEQUATE TO REFLECT TAX EXPOSURE**					
Assertions		COMPLETENESS	EXISTENCE	ACCURACY	VALUATION	RIGHTS & OBLIGATIONS	PRESENTATION & DISCLOSURE
SBR3							
	1	12	0	4	11	3	1
	2	4	6	8	4	4	6
T1S4		**INEFFECTIVE TAX PLANNING AND SIGNIFICANT CHANGES IN TAX LAWS**					
Assertions		COMPLETENESS	EXISTENCE	ACCURACY	VALUATION	RIGHTS & OBLIGATIONS	PRESENTATION & DISCLOSURE
SBR4							
	1	10	0	6	10	4	1
	2	8	6	7	3	2	6
T2S1	**PANEL C**	**COMPANY'S RISK MANAGEMENT STRATEGIES, POLICIES AND PROCEDURES DO NOT PROTECT AGAINST ANTICIPATED LEGAL EXPOSURES AND CONTINGENCIES**					
Assertions		COMPLETENESS	EXISTENCE	ACCURACY	VALUATION	RIGHTS & OBLIGATIONS	PRESENTATION & DISCLOSURE
SBR1							
	1	14	3	0	2	10	3
	2	7	4	3	5	5	8

TABLE 3: FREQUENCY COUNTS SHOWING AUDITORS' RANKED IMPORTANCE OF FINANCIAL STATEMENT ASSERTIONS

T2S2		**COMPANY'S RISK MANAGEMENT STRATEGIES, POLICIES AND PROCEDURES DO NOT PROTECT AGAINST ANTICIPATED LEGAL EXPOSURES AND CONTINGENCIES, ARISING IN A HIGH RATE OF SALES RETURNS**					
Assertions		COMPLETENESS	EXISTENCE	ACCURACY	VALUATION	RIGHTS & OBLIGATIONS	PRESENTATION & DISCLOSURE
SBR2	1	13	2	0	6	8	2
	2	6	6	4	6	5	4
T2S3	**PANEL D**	**THE COMPANY'S CASH FLOWS APPEAR INADEQUATE TO MEET CURRENT EXPENDITURES**					
Assertions		COMPLETENESS	EXISTENCE	ACCURACY	VALUATION	RIGHTS & OBLIGATIONS	PRESENTATION & DISCLOSURE
SBR3							
	1	4	4	1	3	5	14
	2	5	7	3	3	9	4
T2S4		**CURRENT EXPANSION OF OPERATIONS THROUGH ACQUISITIONS HAS RESULTED IN INADEQUATE CASH FLOWS TO MEET EXPENDITURES**					
Assertions		COMPLETENESS	EXISTENCE	ACCURACY	VALUATION	RIGHTS & OBLIGATIONS	PRESENTATION & DISCLOSURE
SBR4							
	1	2	5	1	5	5	13
	2	10	2	2	5	9	3

In Scenario 1 auditors evaluate the importance of assertions for complex financial instruments. In the base scenario the assertions ranked as the most important (rank 1) were valuation (by 18-see Table 3 Panel A) and existence (by 10). When volatility, poor performance, and market risk are added as environmental risk factors more auditors ranked valuation (by 22) as the most important and accuracy became more important for several auditors. The shifts to valuation and accuracy came as fewer auditors ranked existence as number 1. The Wilcoxan signed ranks test reported in Table 5 shows that the ranking shifts for accuracy (p is .027) and existence (p is .003) are significant at the .05 level.

For Scenario 2's base scenario auditors evaluate assertions relative to ineffective tax planning and the inadequacy of tax reserves given tax exposure. The majority of auditors are split in ranking either completeness (by 12-see Table 3 Panel B) or valuation (by 11) as the prime assertion. For the enhanced risk tax scenario that introduces significant changes in tax laws only two auditors shift their prime assertion to accuracy (see Table 3 Panel B). The Wilcoxan signed ranks test (Table 5) confirms the static nature of the assessments detecting no significant ranking changes between the base and enhanced scenarios.

In the base Scenario 3 auditors rank the importance of the assertions relative to risk management strategies, policies, and procedures and the adequacy of management's endeavors to protect against legal exposures and contingencies. Completeness receives the majority of number 1 rankings (by 14 see Table 3 Panel C) with rights and obligations receiving the second highest tally at 10. When the base scenario is augmented with a high rate of sales returns auditors shift assertion rankings slightly away from completeness

and rights/obligations to valuation (picks up 4 "1" ranks relative to base scenario). The Wilcoxan signed rank tests (see Table 5) detects that auditors are shuffling the ranking of the presentation and disclosure assertion across the 1-6 ranks in a statistically significant fashion (p is .04) indicating that auditors are changing the relative ranking of this assertion in the enhanced risk scenario.

For Scenario 4 auditors evaluate cash flow adequacy in meeting current expenditures in the base scenario. The majority of auditors (by 14) rank presentation and disclosure as the prime assertion for the cash flow scenario. Among those choosing another assertion as primary there is fairly even support for the other assertions (except for accuracy). In the enhanced cash flow scenario presentation is still viewed by the majority of auditors as the prime assertion but others shift sway from completeness to existence and valuation as primary. The signed rank test (see Table 5) detects shifts between all the rankings, 1-6, and finds statistically significant shifts in the relative rankings of accuracy (p. is .031) and valuation (p is .037).

In three of the four scenarios there is evidence to support H3, that auditors adapt their assessment of relevant financial statement audit assertions between base and enhanced audit risk scenarios. The only scenario failing to offer evidence to support H2 involves the area of tax planning and the enhanced risk resulting from shifts in the regulatory environment. Valuation and completeness were the assessed dominant assertions in the base and enhanced tax environments. This case is instructive as it suggests that at times certain audit assertions may always remain as the prime considerations for given audit areas. The failure to shift assertions, then, may not necessarily reflect a failure on the part of an auditor to think critically.

Auditors also ranked the importance of selected audit procedures in comparing the base scenarios with the enhanced risk scenarios (H4). See the Appendix table to reference the available auditor procedures that auditors selected from for each scenario. As this table shows the audit procedures vary between scenarios depending on the scenario's characteristics, however the procedures were held constant within each scenario as the auditors considered the base scenario and then the enhanced one.

Table 4 summarizes the auditors' rankings of the importance of financial statement assertions for each of the four base and paired enhanced risk scenarios. For clarity and readability each panel (A-D) shows truncated ranking results revealing only the first and second procedures ranked in each comparative scenario.

TABLE 4: FREQUENCY COUNTS SHOWING AUDITORS' RANKED IMPORTANCE OF AUDIT PROCEDURES

T1S1	**PANEL A**	**COMPLEX FINANCIAL INSTRUMENTS**			
SBR1	Proc. Ranked	CONFIRM BALANCES	VOUCH JE'S & AJE'S	ASSESS VALUATION	TEST TRANSACTIONS
Planned	1	17	0	13	1
Audit Proc.	2	13	2	13	3
T1S2		**COMPLEX FINANCIAL INSTRUMENTS WITH VOLATILITY AND POOR PERFORMANCE OF THE EQUITY MARKETS MAY INCREASE MARKET RISK AND LEAD TO SIGNIFICANT LOSSES**			
SBR2		CONFIRM BALANCES	VOUCH JE'S & AJE'S	ASSESS VALUATION	TEST TRANSACTIONS
Planned	1	11	1	19	0
Audit Proc.	2	18	1	12	0

TABLE 4: FREQUENCY COUNTS SHOWING AUDITORS' RANKED IMPORTANCE OF AUDIT PROCEDURES					
T1S3	**Panel B**	**INEFFECTIVE TAX PLANNING. TAX RESERVE IS INADEQUATE TO REFLECT TAX EXPOSURE**			
SBR3		AUDIT CALCULATIONS OF INCOME TAX PROVIISION	TEST VALIDITY OF AMOUNTS & ASSUMPTIONS OF ACCRUAL ITEMS	TEST RECOVERABILITY OF DEFERRED TAX ASSETS & AGREE TO RECORDED AMOUNTS	CREDIT MEMO TESTING
Planned	1	9	20	2	0
Audit Proc.	2	7	9	14	1
T1S4		**INEFFECTIVE TAX PLANNING AND SIGNIFICANT CHANGES IN TAX LAWS**			
SBR4		AUDIT CALCULATIONS OF INCOME TAX PROVIISION	TEST VALIDITY OF AMOUNTS & ASSUMPTIONS OF ACCRUAL ITEMS	TEST RECOVERABILITY OF DEFERRED TAX ASSETS & AGREE TO RECORDED AMOUNTS	CREDIT MEMO TESTING
Planned	1	11	17	3	0
Audit Proc.	2	9	13	8	1
T2S1	**PANEL C**	**COMPANY'S RISK MANAGEMENT STRATEGIES, POLICIES AND PROCEDURES DO NOT PROTECT AGAINST ANTICIPATED LEGAL EXPOSURES AND CONTINGENCIES**			
SBR1		ATTORNEY CONFIRMATION	EVALUATE WHETHER RECORDED BALANCES REPRESENT PROBABLE LOSSES	SALES CUT-OFF TESTING	REVIEW CAPITALIZED COSTS
Planned	1	23	7	0	0
Audit Proc.	2	7	20	1	2
T2S2		**COMPANY'S RISK MANAGEMENT STRATEGIES, POLICIES AND PROCEDURES DO NOT PROTECT AGAINST ANTICIPATED LEGAL EXPOSURES AND CONTINGENCIES, ARISING IN A HIGH RATE OF SALES RETURNS**			
SBR2		ATTORNEY CONFIRMATION	EVALUATE WHETHER RECORDED BALANCES REPRESENT PROBABLE LOSSES	SALES CUT-OFF TESTING	REVIEW CAPITALIZED COSTS
Planned	1	11	7	7	6
Audit Proc.	2	9	12	7	3

TABLE 4: FREQUENCY COUNTS SHOWING AUDITORS' RANKED IMPORTANCE OF AUDIT PROCEDURES

T2S3	**Panel D**	**THE COMPANY'S CASH FLOWS APPEAR INADEQUATE TO MEET CURRENT EXPENDITURES**			
SBR3		REVIEW CLIENT'S DEBT AGREEMENTS	ASSESS GOING-CONCERN	IMPAIRMENT TESTING	REVIEW CAPITALIZED COSTS
Planned	1	4	25	2	0
Audit Proc.	2	16	3	8	4
T2S4		**CURRENT EXPANSION OF OPERATIONS THROUGH ACQUISITIONS HAS RESULTED IN INADEQUATE CASH FLOWS TO MEET EXPENDITURES**			
SBR4		REVIEW CLIENT'S DEBT AGREEMENTS	ASSESS GOING-CONCERN	IMPAIRMENT TESTING	REVIEW CAPITALIZED COSTS
Planned	1	8	15	4	4
Audit Proc.	2	9	6	11	5

In the complex financial instrument scenario the highest ranked audit procedure for the base scenario was to confirm balances with counterparties related to executed hedges (by 17 see Table 4 Panel A). Thirteen other auditors ranked assessing valuation issues associated with the instrument involving a specialist, if necessary as number one. When volatility, poor performance, and market risk are added as environmental risk factors the procedure to assess valuation assumes prime importance (by 19) and confirmations become secondarily important (by 11). This reversal of the importance of the procedures tests as significantly significant (see Table 6 for the signed rank test results).

In the tax planning scenario the majority of auditors rank testing the validity of amounts used and assumptions made in preparing analysis of the accrual of tax exposure items as most important (by 20 see Table 4 Panel B). The audit related calculation of the income tax provision also received the prime ranking by 9 auditors. The coupling of ineffective tax planning with significant changes in the tax laws caused several auditors to elevate the importance of auditing the calculation of the income tax provision (from 9 to 11) and away from testing the validity and assumptions of the accrual (from 20 to 17) as the number one ranked objectives. However, all the rank shifts among the audit procedures for Scenario 2 did not test as statistically significant. These findings may simply suggest that the auditing of tax expense and the related accounts may almost always be focused on testing the assumptions of the accrual and the calculation of the tax provision and do not necessarily implicate auditors as failing to recognize the implications of enhanced audit risk in the environment.

TABLE 5: Wilcoxan Signed Rank Tests Results of Auditors' Ranked Financial Statement Assertions

	COM= Completeness	EX= Existence	ACC= Accuracy	VAL= Valuation	OBL= Rights & Obligations	PRES= Presentation & Disclosure
Financial Instruments Scenario						
	t1s2Com – t1s1Com	t1s2Ex - t1s1Ex	t1s2ACC - t1s1ACC	t1s2VAL - t1s1VAL	t1s2OBL - t1s1OBL	t1s2PRES - t1s1PRES
Z	-.521(a)	-3.015(b)	-2.204(a)	-1.261(a)	-1.355(b)	-1.152(a)
Asymp. Sig. (2-tailed)	.602	.003	.027	.207	.175	.249
Tax Planning Scenario						
	t1s4Com – t1s3Com	t1s4Ex - t1s3Ex	t1s4ACC - t1s3ACC	t1s4VAL - t1s3VAL	t1s4OBL - t1s3OBL	t1s4PRES - t1s3PRES
Z	-.361(a)	-.061(a)	.000(c)	-1.594(b)	-.333(a)	-1.025(a)
Asymp. Sig. (2-tailed)	.718	.952	1.000	.111	.739	.305
Risk Management Scenario						
	t2s2Com – t2s1Com	t2s2Ex - t2s1Ex	t2s2ACC - t2s1ACC	t2s2VAL - t2s1VAL	t2s2OBL - t2s1OBL	t2s2PRES - t2s1PRES
Z	-.319(b)	-.193(a)	-.676(a)	-.981(a)	-.542(a)	-2.057(b)
Asymp. Sig. (2-tailed)	.749	.847	.499	.327	.588	.040
Cash Flow Adequacy Scenario						
	t2s4Com – t2s3Com	t2s4Ex - t2s3Ex	t2s4ACC - t2s3ACC	t2s4VAL - t2s3VAL	t2s4OBL - t2s3OBL	t2s4PRES - t2s3PRES
Z	-.766(a)	-1.531(b)	-2.153(b)	-2.083(a)	-.734(a)	-.747(b)
Asymp. Sig. (2-tailed)	.444	.126	.031	.037	.463	.455

a . Based on positive ranks.

b. Based on negative ranks.

This table reports the results of testing for differences in the ranks that auditors applied in judging the importance of financial statement assertions in auditing the base and then the enhanced scenario for the 4 business risks.

t1s1 - Finance group-Base complex financial instrument risk
t1s2 - Finance group-Enhanced complex financial instrument risk
t1s3 - Finance group-Base risk of ineffective tax planning
t1s4 - Finance group-Enhanced tax risk with changes in tax laws
t2s1-Retail group-Base risk management scenario
t2s2-Retail group, Enhanced risk management scenario

TABLE 5: Wilcoxan Signed Rank Tests Results of Auditors' Ranked Financial Statement Assertions

t2s3-Retail group, Base cash flow inadequacy risk
t2s4- Retail group, Enhanced cash flow inadequacy risk
See Appendix for more scenario information.

TABLE 6: Wilcoxan Signed Rank Test Results of Auditors' Ranked Planned Audit Procedures

Financial Instruments Scenario				
	t1s2CONF - t1s1CONF	t1s2vouch - t1s1vouch	t1s2asses - t1s1asses	t1s2test - t1s1test
Z	-2.333(b)	-.333(b)	-2.667(a)	-1.098(b)
Asymp. Sig. (2-tailed)	.020	.739	.008	.272
Tax Planning Scenario				
	t1s4cacl- t1scalc	t1s4test – t1s3test	t1s4recov - t1s3recov	t1s4memo - t1s3mem0
Z	-1.255(a)	-.535(b)	-.884(b)	.000(c)
Asymp. Sig. (2-tailed)	.210	.593	.377	1.000
Risk Management Scenario				
	t2s2conf - t2s1conf	t2s2eval – t2s1eval	t2s2cutoff - t2s1cutoff	t2s2review - t2s1review
Z	-3.473(b)	-2.207(b)	-2.919(a)	-2.172(a)
Asymp. Sig. (2-tailed)	.001	.027	.004	.030
Cash Flow Adequacy Scenario				
Wilcoxan Signed Ranks Test	t2s4obtain - t2s3obtain	t2s4assess - t2s3assess	t2s4impair - t2s3impair	t2s4review - t2s3review
Z	-.272(b)	-3.247(b)	-1.656(a)	-2.300(a)
Asymp. Sig. (2-tailed)	.785	.001	.098	.021

a Based on positive ranks.
b Based on negative ranks.

This table reports the results of testing for differences in the ranks that auditors assigned in selecting planned audit procedures for the base and then the enhanced scenario for the 4 business risks.

t1s1 – Finance group-Base complex financial instrument risk
t1s2- Finance group-Enhanced complex financial instrument risk
t1s3- Finance group-Base risk of ineffective tax planning
t1s4- Finance group-Enhanced tax risk with changes in tax laws

t2s1-Retail group-Base risk management scenario
t2s2-Retail group, Enhanced risk management scenario

TABLE 6: Wilcoxan Signed Rank Test Results of Auditors' Ranked Planned Audit Procedures	
	t2s3-Retail group, Base cash flow inadequacy risk t2s4- Retail group, Enhanced cash flow inadequacy risk See appendix for more scenario information.

In the base risk management scenario the majority of auditors rank obtaining an attorney confirmation as the number one audit procedure (by 23 see Table 4 Panel C). Seven auditors chose evaluating whether recorded balances represent probable and estimable losses as their primary procedure. Once the environmental risk of elevated sales returns is introduced auditors show shifts between the preferred procedures. Attorney confirmations are no longer preferred by the majority (now 11). And while no auditors ranked sales cut-off testing and reviewing capitalized costs as the number one audit procedure in the base scenario 7 and 6 did so, respectively, with the risk of sales returns. The shifts in auditor rankings of the audit procedures in this third scenario test as statistically significant.

The cash flow inadequacy of Scenario 4 caused most auditors (25 see Table 4 Panel D) to rank assess going concern as the number one audit procedure in the base scenario. Four of the auditors ranked obtaining and reviewing the client's debt agreements as most important. The risk that the cash flow inadequacy stems from acquisition activity caused auditors to move away from assess going concern as primary (from 25 to 15) and shift equally to two other audit procedures (reviewing debt agreements and reviewing capitalized costs). Several auditors also chose impairment testing as primary for the enhanced risk scenario. The shifts away from assessing going concern to the other procedures are statistically significant.

In three of the four scenarios (see Table 6) tested auditors show that elevations of risk in the audit environment prompt changes in the selection of audit procedures to comprise the audit program. These findings offer support for H4 which predicts that auditors will change audit procedures when risk factors are present in the environment.

IMPLICATIONS AND FURTHER RESEARCH

The current audit environment requires and challenges auditors to recognize business risks of the client's environment. Audit environments containing significant business risk require that audit judgments and applied audit procedures adapt to ensure adequate audit performance and to avoid audit failures. While auditors are now required to plan audits to address business risks in the client's environment, research is only beginning to emerge that documents the effects of business risk on audit judgment and the planning and execution of audit procedures. This study provides evidence that auditors recognize that the presence of business risk increases the likelihood of material error in the client's financial statements. This study also provides support that the presence of business risk impacts the auditors' judgment regarding the differential relevance of financial statement assertions and planned audit procedures to varying risk scenarios.

Much more research with varied designs is needed to further investigate auditors' responses when business risks are encountered in the audit environment. For example, this study's findings suggest that auditors consider business risk when ranking relevant financial statement assertions. Further research is needed regarding the audit planning phase which might include how auditors link strategic risk, not only to assertions, but also to classes of transactions and to specific account balances. Field case studies contrasting

audits before and after applications of PCAOB standards could demonstrate actual shifts in planned audit approaches showing auditors' responses to assessing business risk in the audit engagement.

SUMMARY

Audit firms frequently require auditors to make business risk assessments in the audit planning process. Furthermore, to meet the rigorous new and revised standards issued by the PCAOB, auditors are increasingly required to link business risk to classes of transactions, account balances and to the financial statement assertions affected. However, while auditors are required to make business risk assessments in the planning phase of each audit, few studies have addressed the effect of business risk assessments on audit judgment.

This study contributes to the literature by examining the impact of business risk on the auditor's identification of significant financial statement assertions and planned audit procedures. We also examine the effect of business risk on the auditor's assessment of the likelihood of a material error in the financial statements given an identified business risk. This study finds evidence that auditors do link business risk to the financial statement assertions affected. Furthermore, planned audit procedures are affected by business risk The findings suggests that auditors utilizing a business risk audit methodology may lead the auditor to view business risk as an indication of possible misstatement in the financial statements.

Audit judgment literature and audit practice would benefit from future research that examines the effect of experience on auditors' business risk assessments. Furthermore, field studies examining the impact of audit methodologies utilized by audit firms on identifying fraudulent financial reporting would contribute to the audit judgment and decision-making literature.

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APPENDIX

T1 is Finance Group	**Business Risks**	**Rank Significant Financial Statements Assertions in Order of Importance (1 = most important; 6 = least important)**	**Pank Planned Audit Procedure in Order of Importance (1 = most important; 4 = least important)**
T1S1 T1S2	Complex financial instruments –SBR1 Complex financial instruments with volatility and poor performance of the equity markets may increase market risk and lead to significant losses-SBR2 **[SCENARIO 1]**	Completeness ____ Existence ____ Accuracy ____ Valuation ____ Obligations & Rights ____ Presentation & Disclosure _____	____ Confirm recorded balance with counterparties related to executed hedges. _____Vouch journal entries and adjustments _____Assess valuation issues associated with the instrument involving a specialist if necessary _____Test bill and hold transactions
T1S3	Ineffective tax planning. Tax reserve is inadequate to reflect tax exposure.-SBR3	Completeness____ Existence ____	_____Audit related calculations of the income tax provision. ____Test validity of amounts

APPENDIX			
T1S4	Ineffective tax planning and significant changes in tax laws.-SBR4 **[SCENARIO 2]**	Accuracy ____ Valuation ____ Obligations & Rights _____ Presentation & Disclosure ____	used and assumptions made in preparing analysis of accrual for tax exposure items. ____Test recoverability of recorded deferred tax assets, and agree to recorded amounts. _____Credit memo testing
T2 is Retail Group	**Business Risks**	**Rank Significant Financial Statement Assertions in Order of Importance (1 = most important; 6 = least important)**	**Rank Planned Audit Procedure in Order of Importance (1 = most important; 4 = least important)**
T2S1 T2S2	Company's risk management strategies, policies and procedures do not protect against anticipated legal exposures and contingencies. –SBR1 Company's risk management strategies, policies and procedures do not protect against anticipated legal exposures and contingencies, arising in a high rate of sales returns. –SBR2 **[SCENARIO 3]**	Completeness _____ Existence ____ Accuracy ____ Valuation _____ Obligations & Rights ____ Presentation & Disclosure _____	___Obtain attorney confirmation ____Evaluate whether recorded balances represent probable and estimable losses. ___Sales cut-off testing _____Review capitalized costs
T2S3 T2S4	The company's cash flows appear inadequate to meet current expenditures.-SBR3 Current expansion of operations through acquisitions has resulted in inadequate cash flows to meet expenditures.-SBR4 **[SCENARIO 4]**	Completeness_____ Existence ____ Accuracy ____ Valuation ____ Obligations & Rights ____ Presentation & Disclosure _____	____Obtain and review client's debt agreements _____Assess going-concern considerations _____Impairment testing ____R eview capitalized costs

IMPLEMENTATION OF ENTERPRISE RISK MANAGEMENT (ERM) TOOLS – A CASE STUDY

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ABSTRACT

This case study in illustrates how one private sector organization (Case A), uses ERM within its strategic control process. The strategic framework adopted by the case company encompasses objective setting, risk identification, risk assessment, application of value at risk (VAR) as a quantitative risk assessment technique employed by the case company, and portraying risk assessment analyzed in Section A. This case study demonstrates the prudence and practicality of the recommendations of COSO (2004) framework and Turnbull report for integrating the management of risk and organizational performance in general as part of a coherent approach to corporate governance.

Key Words: Implementing ERM, COSO Framework, Risk Analysis
JEL Classification: C15, C51, G32, L21,

INTRODUCTION

Risk and the need to manage it is nothing new. Hoffman observes that Maslow implicitly recognized risk in his famous hierarchy of needs by placing food and shelter, both essential to survival and the first rung of the ladder (Hoffman, 2002). A failure to manage the risk of these needs not being met can have catastrophic results, as much for organizations today as it was for the earliest life forms. Bernstein cites the impact of wars on markets, and storms and piracy on shipping routes as much as some of the major risks faced and managed by our predecessors (Bernstein, 1996a). He also notes that only 350 years separate today's risk management techniques from decisions made on the basis of superstition and instinct (Bernstein, 1996b).

Are risk concepts today new to organizations?

If risk is nothing new to organizations, why is risk management generating rising levels of interest at present as seen by the growing volume of current literature on the topic? For example, Stevenson et al propose that heightened levels of competition and a rapid pace of change are destroying predictability for organizations, implicitly raising the levels of risk faced (Steveneson, 1995), while Lewis claims that modified competitive, technological, social, and political circumstances have magnified the potential impact of operations-related failure (Lewis, 2003). Delamontagne and Witzel echo this in stating that events such as the September 11th terrorist incident in New York and the Enron meltdown have moved risk management higher on the business agenda (Delamontagne, 2003; Witzel, 2002). Hoffman (2002) maintains that watershed changes in society, technology, science, and the interconnected nature of global society and business make the subject more relevant than ever before. He supports this position with reference to a database of operational loss events suggesting that majority of reported commercial losses have occurred since the

beginning of 1990s. Whether this rise in historical trend levels might instead be due simply to improved record-keeping and transparency is unfortunately note explained.

Seeking to understand the likelihood and impact of future events, be they favorable or unfavorable, in order to maximize future business performance, is a decades old activity: by the late 1960s, Royal Dutch Shell had begun to develop scenarios that were designed to help management prepare for future uncertainties. This preparation was useful in enabling management to react more quickly to the 1973 oil crisis, for example Wack and King et al were describing "long-range planning" in terms similar to those used for risk management today (Wack, 1985; King et al, 1978). Here the authors discussed the need to generate predictions of the future along multiple dimensions (staff, product, competition, etc) and compare these predictions to the desired future organizational state to identify the management interventions required. They noted that this planning process would not eliminate risk, but should identify and help to manage risks, thereby increasing the "benefit/cost ratio". In 1981, Pomeranz et al used similar words to describe "strategic planning" (Pomeranz, 1981). They observed that companies were increasingly engaging in strategic planning in an effort to better manage the "shifting conditions which can disrupt achievement of a company's long-range plan". They characterize strategic planning as a process that attempt to match environmental threats with corporate resources, and go on to suggest that the auditing of strategic plans can help to define business risks and verify that these risks have been "appropriately considered".

Although the concepts described in these earlier papers have much in common with risk management as it is understood today, efforts have been made over the last several years to develop the frameworks, tools, and processes to drive and support risk management as a discipline separate from but aligned with strategic performance management.

Is the Concept of Risk Management and Management Action today Realistic and Feasible?

The answer to this question lies in our careful understanding of more inclusive definition of risk provided by the influential Risk Management Group of the Basel Committee on Banking Supervision i.e., "the risk of loss resulting from inadequate or failed processes, people and systems or from external events (The Basel Committee, 2001). Using this Basel definition, for the risk management to be realistic with a feasible management action, the management of risk must involve actions taken by management to minimize the likelihood of asset damaging or loss-generating events from occurring, and mitigating the impact on the organization should they occur. Carey, in assessing the Turnbull Report, issued to provide guidance to listed UK companies to help them improve their internal controls notes that the report calls on boards to identify risks that are significant to the fulfillment of corporate business objectives and to implement a sound internal control system to manage these risks effectively (Carrey, 2000).

In 2004, COSO (The Committee of Sponsoring Organizations of the Treadway Commission) developed guidelines on the framework that would be readily usable by managements to evaluate and improve their organizations' ERM. According to the document, control is the responsibility of the board of directors, management and other personnel within the organization, not just the practicing finance managers and accountants. Particularly relevant is the identification of risk assessment as a vital component of control. The need of the business practitioners today is about a framework which is easy to follow, understand and apply through examples to implement enterprise-wide risk management (ERM). This paper attempts to present such a framework through case analysis for the benefit of integrating various concepts for easy implementation.

Case study: Integration of Strategic control and Risk Management

The following case study in a business establishment in Dubai (the name is kept anonymous for the sake of confidentiality) illustrates how one private sector organization (Case A), uses ERM within its strategic control process. The strategic framework closely aligns with the concepts covered by the Basel committee recommendations and COSO 2004 document. The case study is organized in to three sections. Section A illustrates the strategic framework adopted by the case company through objective setting, risk identification, risk assessment, application of value at risk (VAR) as a quantitative risk assessment technique employed by the case company, and portraying risk assessment. Section B concludes the strategic framework of the case company while, section C draws implications of the framework to the practicing managers.

SECTION A

A.1 Objective Setting

Every firm faces a variety of risks from external and internal sources, and a precondition to effective risk/event identification, assessment and response is established in objectives. Objectives are aligned with the firm's risk appetite, which drives risk tolerance level for the firm.

In this perspective, Case A's strategic control process is seen as a part of a wider corporate governance framework and includes the responsibility for the Executive Management Team to set and communicate long-term strategic goals/objectives for the company by defining what the company objectives are set at the strategic level, establishing a basis for operations, reporting and compliance as illustrated below:

The Case A's strategic mission is to be a leading producer of quality household product in the gulf cooperation council (GCC) countries. Executive management translates these high-level strategic goals in to an annual business action plan prioritizing activities and initiative deemed to deliver most effectively and efficiently the results required within existing resource constraints, and defining specific objective. The annual business plans are amended throughout the year as a result of an ongoing review process to incorporate new operational learning, threats and other changes to underlying planning assumptions, still in consideration of given resource constraints.

In Case-A, the strategic objective is to be one among the top 25% of product sales in the GCC. The appropriate instrument for measuring this objective is the market share. Market share itself is a function of units of production and number of staff hired. Case A operationalizes the strategy by "expanding the production of one of its five business units (BU-A) in the GCC" to meet the increasing demand for the retail products. While setting this operational strategy, the company management recognized its risk appetite in that: (a) the expansion of BU-A required increased capital investment in new assets, people and process, (b) accept the fact that initially there is reduced profit margin (PM) due to increased competition, and (c) the new production should maintain high reliability in terms of MTBF (mean time between failures).

With these risks recognized, the related operational objectives for the company were: (a) to increase production of BU-A by 15% in the next 12 months, (b) Hire 100 qualified new staff across all manufacturing divisions and (c) ensure higher MTBF as desired by the customers. Figure 1 shows the linkages of strategic objectives, and risk appetite to the mission of the company. Case-A also specifies its risk tolerance limits within which it operates comfortably. The last box in Figure 1 illustrates this risk tolerance limit.

A.2 Risk Identification

Initial risk identification happens throughout the organization as an integral part of this business planning and review process, and risk issues are referred for resolution in both a top-down and bottom-up manner. Management of Case A defines enterprise risks as follows: "potential events that, if they occur, will affect the firm, and determines whether they represent "Opportunities (O)" or whether they represent "Threats (T)" that might adversely affect the firm's ability to successfully implement strategy and achieve objectives. This broad definition means that for this organization ERM overlaps much of what elsewhere is considered to be the strategic control process. Management of Case A identifies the following as Potential events/risks:

- Tight job market (↑ demand) causing fewer offers being accepted resulting in too few staff
- Inadequate needs/job specification, resulting in hiring unqualified staff

Identified risks are referred to standing committees: Audit, Finance & Planning, and Human Resources. The committees are composed of relevant subject matter experts within the appropriate functional areas of the organization, assisted by the Strategic & Audit Risk department.

Each committee is responsible for evaluating the risks referred to them in terms of degree of risk (both likelihood and impact if crystallized) as well as effectiveness of existing controls or treatments, and the need for implementation of additional controls/treatments in the form of proposed culture, process and/or structural changes. The committees recommend appropriate courses of action directly to the relevant divisions, who are then responsible for incorporating the required risk mitigating activities into their business plans. The committees are also responsible for monitoring high-level risks and the implementation of their recommendations. However, where recommended new controls and treatments cannot be accommodated within existing budgets, new initiatives are prioritized by the Executive Management team as part of the ongoing strategic management and review process.

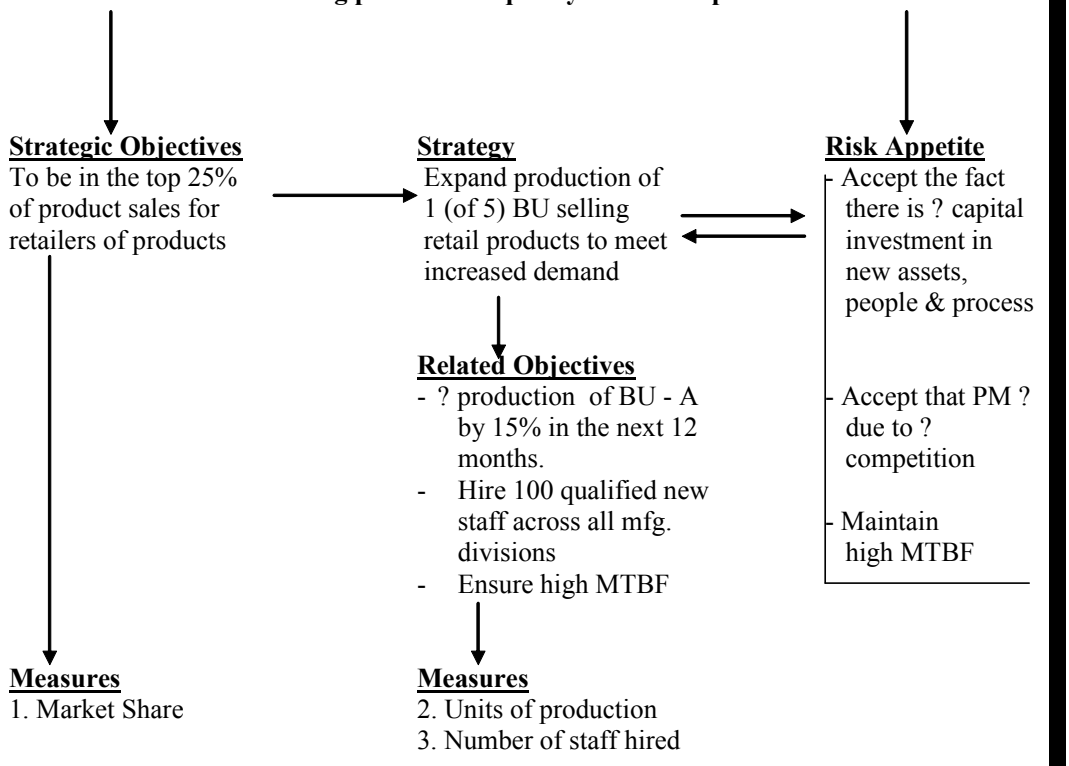
A.3 Risk Assessment

In Case A, the risk assessment process consists of four distinct phases and is illustrated in Figure 2.

The first phase of the process, Risk identification, involves the generation of a comprehensive list of events that could negatively impact the achievement of the organizational objectives and outputs, based on the high-level of strategic plan and lower-level business plans. These were identified as: tight job market and inadequate job specification resulting in hiring unqualified staff.

Next, during the Inherent risk analysis phase, the likelihood and consequences of these events are quantitatively rated as low (20% likelihood) or moderate (30% likelihood) or high (50% likelihood), with consequences evaluated in terms of their impact on the organization's stated objectives; impact is assessed on the dimensions of financial cost, and business reputation damage.

Figure 1 Setting of Strategic Objectives in response to Risk Appetite and Risk Tolerance in Case-A



Risk Tolerances

Measure	Target	Tolerances – Acceptable Range
1. Market share	25th percentile	20 to 30%
2. Units of production	100,000 units	-5,000/ + 10,000
3. # of staff hired (net)	100 staff	-10/ + 20

The third stage of Case A's process, Existing Control Analysis begins by analyzing the effectiveness of existing controls in responding to these inherent risks, with controls defined to include policies and procedures, and codes of practice. In Case A, these risk responses include increasing compensation to the staff or outsourcing to overcome if the risk is about less number of qualified candidates availability; or reviewing hiring process every 2 years if the risk is within the company's risk tolerance limits of stringent hiring process.

The fourth stage, Residual Risk Analysis, involves the impact of risk responses in reducing the likelihood of inherent risk. The residual risk analysis in Case A indicate that due to the risk responses, the risk of less number of qualified candidates is reduced by 5% with only 5 unfulfilled positions against the possible 30 unfulfilled positions and the likelihood of even this risk is very low (10%).

Figure 2 Risk Assessment in Case-A					
Risks	Inherent risk assessment		Risk Response	Residual risk assessment	
	Likelihood	Impact		Likelihood	Impact
Less number of qualified candidates available	20% (Low)	30% ? in hiring BOL224\f"Wingdings"\s10 30 unfilled positions	↑ Compen-sation to the staff Contract in place with a third party hiring agency to source candidates	10% (Low)	5% ? in hiring - 5 unfulfilled positions
Unacceptable variability in our hiring process - (Initial filters for screening candidates too stringent)	30% (Moderate)	20% ? in hiring due to poor candidate screening à 20 unfilled positions	↑ Compen-sation to the staff Review hiring process every 2 years	10% (Low)	5% ? in hiring - 5 unfulfilled positions

Management of Case A normally uses a combination of qualitative (risk mapping) and quantitative (probabilistic techniques such as: Value at risk (VAR), scenario analysis methods) in its risk assessment. It is interesting to see how Case A uses VAR in minimizing risk of loss in its asset value in its new proposed business unit BU-A using equity value as the metric. This procedure is explained below for the benefit of those practitioners who find VAR technique in assessment of its risk cumbersome and unwieldy.

A.3.1 Value at Risk (VAR) Technique

VAR are quantitative probabilistic models to estimate extreme range of **value Δ** (where Δ refers to change) **expected** to **occur infrequently**. This involves the following steps:

1. Value the asset using **today's** price V_0. To value the asset, Case A knows clearly the drivers of the asset pricing i.e., the market factors which determines the price/value of the asset.
2. Revalue (simulate) the asset using a "**number of alternative price lists**" and calculate the changes in the asset value ΔV_i i = 1,2,……N (months/days).
3. Given a distribution of value changes ΔV_i, VAR is specified in terms of confidence level. The risk manager of Case A calculates the maximum value that the company can loose over a specified *time horizon* at a specified *probability* level. For instance, the risk manager defines the maximum loss for a 1-day period or 1-month period at 95 percent probability i.e., the loss that should be exceeded on only 5 days out of 100 business days or 1 month out of 20 months of business operation and the like.

A.3.2 Application of VAR

Case A's financial manger's objective is to calculate a 1-month 95 percent confidence level VAR for the asset A of his company. The manager earlier tried to use capital asset pricing model (CAPM) framework for assessing the asset value. The manger later learnt that CAPM is not the appropriate asset pricing framework in the Middle-East due to market imperfections (Rao, 2000). So the manager adopts the following multi-factor model to value asset A since market index, United Arab Emirates (UAE) bank interest rate, and monthly oil price are key market factors that drive the value of the asset in the UAE.

$$R = \alpha + \beta_1 (R_m - R_f) + \beta_2 (OP) + \epsilon \quad \text{Equation (1)}$$

Where

R = Value of asset A in terms of daily percentage returns
α = Constant term
β_1 = sensitivity of the asset to market return R_m (proxied by NBAD (National Bank of Abu Dhabi) market index or EMI (Emirates Market Index)
R_f = Risk free interest rate (bank monthly rate)
β_2 = sensitivity of the asset to oil prices (OP) and ϵ = error term

Case-A financial manager performs the following steps in its VAR:

Step 1: Collect the following monthly basic data for Asset of Case A.

N	Price (A) Dhs	Mkt NDX	R_f	OP	ΔRm_i	ΔR_{fi}	Δ OP
3	88	1201.87	0.5053	23.59	7.20345071	-0.1127	-4.17
4	90	1368.36	0.5053	24.31	7.32176488	0	0.72
5	87.5	1196.18	0.5053	25.46	-26.4355257	0	1.15
6	89	1308.89	0.5277	26.66	22.005441	0.0224	1.20
7	100	1314.56	0.5277	27.66	-8.98930346	0	1.00
8	110	1431.8	0.5277	25.52	8.48538203	0	-2.14
9	119.5	1415.14	0.5240	27.42	-10.0821438	-0.0037	1.90
10	115	1440.88	0.5240	27.62	2.98247164	0	0.20
11	116	1499.66	0.4193	30.88	2.26055014	-0.1047	3.26
12	116	1549.39	0.4193	30.61	-0.76336647	0	-0.27
13	118	1559.78	0.4193	33.06	-2.64549849	0	2.45
14	119	1568.76	0.4680	34.13	-0.09486427	0.0487	1.07
15	126	1660.65	0.4680	36.77	5.28177032	0	2.64
16	141.1	1817.05	0.4680	35.89	3.56050643	0	-0.88
17	150	2007.6	0.6557	37.22	1.06877904	0.1877	1.33
18	159	2028.8	0.6557	40.92	-9.43079077	0	3.70

N	Price (A) Dhs	Mkt NDX	R_f	OP	ΔRm_i	ΔR_{fi}	Δ OP
19	175	2102.94	0.7693	41.91	2.59838972	0.1136	0.99
20	168	2489.91	0.7693	40.14	14.747004	0	-1.77
21	192	2923.9	0.7693	38.95	-0.97143366	0	-1.19
22	229	3360.92	0.9377	43.53	-2.48347167	0.1684	4.58
23	265	4331.55	0.9377	49.90	13.9334144	0	6.37
24	372	5398.95	1.1283	51.03	-4.23744102	0.1906	1.13
25	337	4992.11	1.3450	57.05	-32.1779883	0.2167	6.02
26	360	5593.64	1.3450	61.78	19.5851536	0	4.73
Current value (V_o)		5700	1.35	62.00			

Step.2: The one month changes in the three market factors (R_m), (R_f), and (OP) are shown in the last three columns.

Step 3: The Case A manager simulates next 24 values for each of these factors by adding this set of 24 monthly changes to current values of R_m (1.9014452%), R_f (1.35%), and OP ($/barrel =62.00, at the time of case development). The computed valued values are provided below:

N	Rm_i	R_{fi}	OP
1	9.1048959	1.2373	57.83
2	9.2232101	1.35	62.72
3	-24.534081	1.35	63.15
4	23.906886	1.3724	63.20
5	-7.0878583	1.35	63.00
6	10.386827	1.35	59.86
7	-8.1806986	1.3463	63.90
8	4.8839168	1.35	62.20
9	4.1619953	1.2453	65.26
10	1.1380787	1.35	61.73
11	-0.7440533	1.35	64.45
12	1.8065809	1.3987	63.07
13	7.1832155	1.35	64.64
14	5.4619516	1.35	61.12
15	2.9702242	1.5377	63.33
16	-7.5293456	1.35	65.70
17	4.4998349	1.4636	62.99

N	Rm_i	R_{fi}	OP
18	16.648449	1.35	60.23
19	0.9300115	1.35	60.81
20	-0.5820265	1.5184	66.58
21	15.83486	1.35	68.37
22	-2.3359958	1.5406	63.13
23	-30.276543	1.5667	68.02
24	21.486599	1.35	66.73

Step 4: Using the pricing model discussed in equation 1, the Case A manager computes the value of Asset A as below (He computes α, β_1 and β_2 (by using **Tools- ADD ON in Excel)** and then plugs the derived simulated values in the model with error terms to compute the value of asset A.

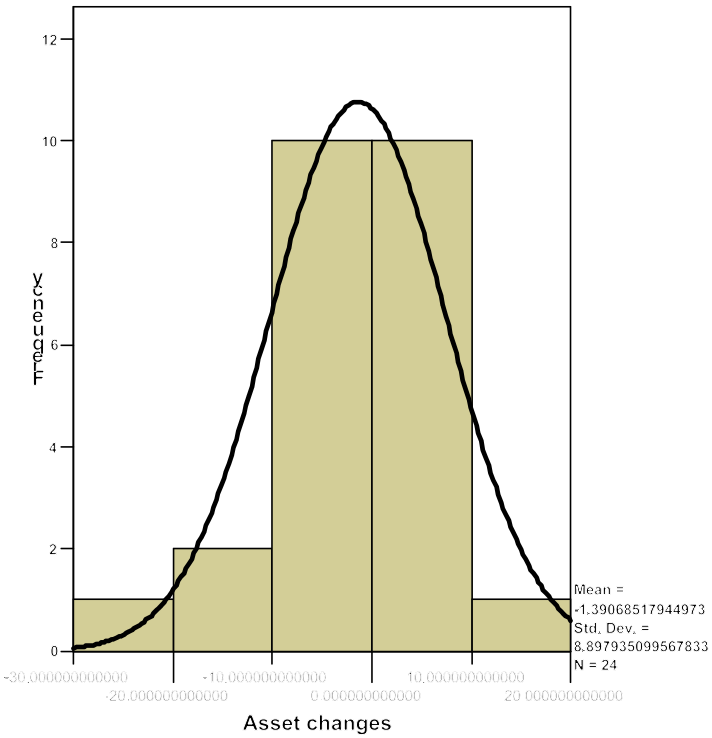
$R_i = \alpha + \beta_1 (R_m - R_f) + \beta_2 (OP) + \epsilon$
-3.008318633
-4.178098731
-13.80957138
6.78515983
3.788531832
6.833647769
0.507746769
-5.925605017
-3.14550101
-5.847832052
-3.623359061
-3.160774543
1.837565355
4.387519008
-3.373307375
-4.377091898
5.04688348
-10.65757685
-1.223153507
4.497342511

$R_i = \alpha + \beta_1 (R_m - R_f) + \beta_2 (OP) + \epsilon$
2.041912686
17.39826236
-29.79971817
5.628892322

Step 5: The manager then sorts the new changes in the asset values from the largest negative change to the largest positive change as below:

-29.799718
-13.809571
-10.657577
-5.925605
-5.8478321
-4.3770919
-4.1780987
-3.6233591
-3.3733074
-3.1607745
-3.145501
-3.0083186
-1.2231535
0.5077468
1.8375654
2.0419127
3.7885318
4.387519
4.4973425
5.0468835
5.6288923
6.7851598
6.8336478
17.398262

The last table and the next graph suggest that, on average, a 95 percent confidence level VAR for asset A is 29.799% decline in value.



A.3.3 Sensitivity analysis:

Case A manger performs sensitivity analysis on the assets values to assess the impact of normal, or routine, changes in potential events/risks. They are used with:

- Operational measures such as the effect of changes in sales volume on call center response time or number of manufacturing defects
- Equity securities using β. For equities β represents the ratio of the movements of an individual stock relative to the movements of an overall market portfolio or a proxy such as EMNEX (Emirates national exchange index) or NBAD index in case of UAE

A.3.4 Scenario analysis:

As an alternative qualitative risk tool, Case A risk manager assesses the effect of one or more risks/events on the company's operational objectives in the business plan, since the Case A management seeks to link growth, risk, and return as shown in the following exhibit:

Impact of various scenarios across multiple business units on total shareholder value added (SVA) (in Million $)		
Unit	**Potential business scenarios**	**Increase (Decrease) in SVA**
Business Unit 1	♦ Risk rating deteriorates by 20%	$ (150)
	♦ Consumer loans ? by 10%	(120)
	♦ Increased competition – one new market entrant	(100)
	♦ Revenue in the banking group ? by 15%	(180)
	♦ Loss of a top-tier customer	(50)
Business Unit 2	♦ Increased competition – one new market entrant	$(50)
	♦ Revenue ? by 10% due to poor customer service	(30)
	♦ Loss of a top-tier customer	(20)
	♦ Unsuccessful new product launch	(20)
	♦ One new pending "large" lawsuit……	(20)
Business Unit 3	♦ Increased competition – one new market entrant	$ (40)
	♦ Revenue ? by 10% due to poor customer service	(30)
	♦ Loss of a top-tier customer……	(20)

A.3.5 Stress testing:

Further, Case A risk manager uses the technique of stress testing as an alternative qualitative risk assessment tool to assess the impact of events/risks having extreme impact. Stress testing differs from scenario analysis in that it focuses on the **direct impact of a change in only one event** or activity under extreme circumstances, as opposed to focusing on changes on a more normal scale as in scenarios analysis. These tests include for example, estimation of a rapid and large:

- ↑ product manufacturing defects
- Movement in FEX rate
- ↑ in interest rates on the value of an asset in a portfolio
- ↑ in energy prices affecting the cost to run a manufacturing plant.

While the foregoing discussion focused on the quantitative techniques for risk assessment the qualitative aspects of risks are portrayed to the top management as below.

A.4 Portraying Risk Assessments

Portraying risks in a clear and concise manner is important especially with qualitative assessment because risks are not summarized in one number or range as with Quantitative techniques.

A.4.1 Risk Maps:

A risk map is a graphic representation of likelihood and impact of one or more risks. Risks are depicted in a way that highlights which risks are more significant (higher likelihood and/or impact) and which are less significant (lower likelihood and/or impact). The following exhibit illustrates a heat map (a type of risk map); presenting risk levels (likelihood and impact). Some risk analysts use color coding with red indicating high risk, yellow indicating moderate risk and green indicating low risk. This coding highlights those risks that are most likely to have a significant effect on objectives. The risk objective of Case A is to maintain a quality workforce.

- Likelihood is considered in terms of: % turnover within a specified period, and
- Impact in terms of costs of operational inefficiency and cost to replace, retrain, and develop employees.

	Risk Topic	Risk Description	Likelihood	Impact
A	Compensation	Employee dissatisfaction with compensation leads to higher staff turnover.	LOW	MODERATE
B	Recognition	Employees feel unrecognized, resulting in reduced focus on tasks and higher error rates.	LOW	LOW
C	Downsizing	Employees are over-utilized and work considerable overtime. Staff leaves to pursue work in other organizations that offer a better work/life balance.	MODERATE	MODERATE
D	Demographics	Changing demographic composition of the employee group causes increased turnover.	HIGH	MODERATE
E	Employment market	Increased demand for company employees by recruiting firms.	LOW	MODERATE
F	Performance evaluation	Employee dissatisfaction with performance appraisal measures and processes cause low morale, staff to focus on non-critical objectives, and loss of staff to companies perceived to be employers of choice.	LOW	MODERATE
G	Communication	Ineffective communication between employees and management results in mixed messages being heard and in the pursuit of alternative employment.	LOW	MODERATE
H	Workplace safety	Unsafe workplace causes employee injury and resignations by injured staff and by others concerned over safety issues.	LOW	HIGH
I	Career Development	Employees perceive limited control over their career development, causing higher turnover.	LOW	MODERATE
J	Work diversity	Employee dissatisfaction with job variety results in rote performance, higher errors in key processes, and pursuit of more interesting job opportunities outside the company.	LOW	MODERATE

Case A flags risks in: high risk cells as high likelihood and cost and low control ratings, moderate risk cells identified as requiring active management in the form of a new initiative or risk treatment plan,

while low risk cells (moderate likelihood and cost, high control rating) are flagged for regular monitoring of control effectiveness. Risks in low cells are deemed to require only the periodic review of inherent risks since they are of low likelihood and cost with low control rating. Finally risks in moderate cells (low likelihood and cost, high control rating) are identified as opportunities to re-allocate control resources to other areas exhibiting higher risks.

A.5 Risk Response

Having assessed relevant risks, management determines how it will respond. Responses include risk avoidance, reduction, sharing, and acceptance. Following are some examples available at the Case A:

Risk Avoidance	Risk Sharing
♦ Disposing of a business unit, product line, geographical segment ♦ Deciding not to engage in new initiatives/activities that would give rise to the risks	♦ Insuring significant unexpected loss ♦ Entering in to JV/Partnership ♦ Entering into syndication agreements ♦ Hedging risks through capital market instruments ♦ Outsourcing business processes ♦ Sharing risks through contractual agreements with customers, vendors, or other business partners
Risk Reduction	**Risk Acceptance**
♦ Diversifying product offerings ♦ Establishing operational limits ♦ Establishing effective business processes ♦ Enhancing management involvement in decision making, monitoring ♦ Rebalancing portfolio of assets to reduce exposure to certain types of losses ♦ Reallocating capital among operating units	♦ "Self-insuring" against loss ♦ Accepting risk as already conforming to risk tolerances.

SECTION B

Conclusion of Risk Management at Case A

When the risk measurement process is complete, a risk management plan is developed to document responsibilities associated with implementing and monitoring actions identified as required through the four stages of risk assessment. Based on this plan, Case A develops risk treatment plans for all risks in the aforementioned red cells, covering the allocation of responsibilities and resources, the establishment of milestones and deadlines, and reporting frameworks. Risk treatment plans are then embedded in the business plans of all applicable sections of Case-A organization. In this way, risk management is not the responsibility of senior management alone, but more appropriately the responsibility of all employees

To maintain control effectiveness, risk treatment plans are reviewed on a periodic basis to ensure that the agreed risk control activities are being conducted. To ensure the continued relevancy of this system, residual risks are re-evaluated on a periodic basis to capture the impact of Case-A's activities to mitigate identified risks. With deeply implemented performance management systems, actions, performance measurement, reporting, and monitoring occur at all levels of Case-A. This risk management system resembles a cascaded performance management system, where responsibility for its effective usage is allocated from senior management down to the front lines. For Case-A, risk management is an organization wide undertaking i.e., ERM.

The ERM processes discussed so far for the identified risks in Case-A is summarized in Figure 3 in the strategic management context.

Figure 3 Linking Objectives, Events, Risk assessment and Risk response at Case-A

Operational objective	Hire 100 new qualified staff across all business units to meet customer demand without overstaffing				
Objective unit of measure	Number of new qualified staff hired				
Tolerance	90 to 120 new qualified staff hired				
Risks	**Inherent risk assessment**		**Risk Response**	**Residual risk assessment**	
	Likelihood	**Impact**		**Likelihood**	**Impact**
Less number of qualified candidates available	20% (Low)	30% ? in hiring BOL224\f"Wingding s"\s10 30 unfilled positions	↑ Compensation to the staff Contract in place with a third party hiring agency to source candidates	10% (Low)	5% ? in hiring - 5 unfulfilled positions
Unacceptable variability in our hiring process - (Initial filters for screening candidates too stringent)	30% (Moderate)	20% ? in hiring due to poor candidate screening à 20 unfilled positions	↑ Compensation to the staff Review hiring process every 2 years	10% (Low)	5% ? in hiring - 5 unfulfilled positions
Tolerance	Total impact of Risk responses of 10 unfulfilled positions is within company's risk tolerance (Moderate risk)				

At the completion of its risk response actions, Case-A management may have a view of individual risks and responses and their alignment with associated tolerances as illustrated in the following exhibit (which is an extension of the exhibit presented on page 3).

SECTION C

Implications for risk and performance managers from this Paper

The review of risk management methodologies discussed for Case-A company in this paper is designed primarily to help managers identify the actions required to maximize the likelihood of achieving organizational objectives. Although many commonalities exist between endogenous risk management and performance management viz., tracking progress against mission, objectives, strategies, regular reviews by management and measurement of activity, significant differentiators are also apparent from the literature review as well as from the above case study, the most obvious of these being the difference in emphasis. While strategic control uses performance management frameworks such as the Balanced Scorecard to identify and monitor what "should happen", risk management frameworks initially focus on the identification of "what should not happen". Traditional performance management approaches might therefore be characterized as "optimistic", and risk management approaches as "pessimistic".

This case study has demonstrated that, the recommendations of COSO framework and Turnbull report for integrating the management of risk and organizational performance in general as part of a coherent approach to corporate governance are both prudent and practical. Because, an organization's exposure to risk and its willingness to accept risk is ultimately decided by the strategic choices it makes and its risk tolerance limits as indicated in the case study in the last rows in Figure 1 and green cell in Figure 3, the implementation of ERM disciplines risk management practices at all levels of the company..

Explanation of acronyms used in this case study

Acronyms used in the paper	Expansion
ERM	Enterprise Risk Management in an entity
IMA	Institute of Management Accountants – located at USA which conducts certification program like Certified Management Accountants (CMA)
COSO	The Committee of Sponsoring Organizations of the Treadway Commission which has representatives from the organizations: American Accounting Association (AAA) American Institute of Certified Public Accountants (AICPA) Financial Executives International (FEI) Institute of Management Accountants (IMA) The Institute of Internal Auditors (IIA)
BU	Business Unit
PM	Profit Margin
CAPM	Capital Asset Pricing Model (used for valuing financial securities)
NBAD	National Bank of Abu Dhabi market index (like S&P 500 index)
EMNEX	Emirates National Exchange market index (alternative market index like Dow Jones)
EMI	Emirates Market Index (like NBAD and EMNEX indices)
MTBF	Mean time between failure – a reliability measure

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SHOULD PROVISIONS OF THE SARBANES-OXLEY ACT OF 2002 APPLY TO LOCAL GOVERNMENTS IN ORDER TO IMPROVE ACCOUNTABILITY AND TRANSPARENCY?

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ABSTRACT

Poor oversight of financial transactions and lack of transparency and accountability by elected officials and appointed management personnel has resulted in corruption and scandals in local government. Often elected officials are asked to approve complex and sophisticated financial transactions as part of the annual budget and financial reporting. However, they may not have the appropriate skill sets and must rely on management personnel for advice on such transactions. However, this creates a potential conflict of interest because the elected officials are obtaining advice from the same managers they are expected to oversee. The bankruptcy filing by Orange County, California in the late 1990s, highlights how things can go wrong when local governments engage in complex financial transactions with little oversight or accountability.

In addition, local governments usually operate with a small staff in order to reduce overall expenses and ultimately the tax burden to the citizenry. As a result, incompatible functions may not be adequately safeguarded, providing an opportunity for managers and other government personnel to misappropriate assets. The daily newspapers identify a number of instances where funds were taken from government coffers because of inadequate internal controls.

The Government Accounting Office recently issued revised guidelines to auditors on how to define and report on internal control weaknesses in government audits. However, we believe that the internal control responsibility is being placed on the auditors, and not local government personnel. Perhaps the solution to improve oversight and accountability already exists - The Sarbanes Oxley Act of 2002 (SOX). In this paper, we propose ways in which certain SOX provisions (e.g., certifications, audit committees) could be implemented by local governments in a cost effective manner to improve oversight, accountability and transparency without significant additional burden to taxpayers.

INTRODUCTION

Overview of the Sarbanes-Oxley Act

The Sarbanes-Oxley Act of 2002 (SOX) was enacted in response to management fraud in Corporate America. Fraud at such premier companies as Enron, WorldCom and Tyco, resulted in misleading financial statements which caused huge losses to investors when the fraud was unraveled. Currently, SOX only applies

to public companies; private companies, not-for-profit organizations and governmental entities are specifically exempt.

Some of the key provisions of SOX specifically Sections 301 (audit committee's oversight of issuers accounting, internal controls and auditing procedures), 302 (annual certification of the financials by the CEO and CFO) and 404 (management's assessment of the effectiveness of internal controls over financial reporting) have increased the role of the board of directors and management in the oversight and reporting process within organizations (Lander, 2004). This has resulted in an increase in accountability and transparency within public corporations so that the ultimate owners (i.e., shareholders) have a better understanding of the business practices and financial transactions within such organizations.

For example, Deloitte & Touché chief executive noted that as a result of SOX, audit committees are more involved and have deepened their understanding of the financial reporting process and accounting policies within their organizations. The executive also noted that SOX has enhanced transparency and reduced the risk of corporate fraud in many organizations (Martin, 2003). In addition, an audit committee chair noted that audit committees have doubled the time spent on audit related matters and that boards are more deeply involved in controls and are better informed of the organization's performance as a result of SOX (Stainburn, 2006).

In terms of financial reporting, one study found that 1,118 US companies and 90 foreign companies – one in every 12 companies with US listed securities – filed a total of 1,342 material weaknesses disclosures in 2006 (Zhang & Pang, 2008). Arlinghaus (2007) reported that twenty seven of the 201 respondents in its study of SOX compliance reported material weaknesses in internal control in the tax area in their annual report on management's assessment of internal control. A material weakness in internal control is a combination or combination of deficiencies that results in a reasonable possibility that a material misstatement in the financial statements would not be prevented or detected on a timely basis (Louwers, Ramsey, Sinason & Strawser, 2008).

Gullapalli (2005) noted that the Heron Consulting Group identified 414 companies with error driven financial restatements in 2004. This was a sharp increase from the 323 in 2003 (Gullapalli, 2005) 330 in 2002 and 270 in 2001 (Farrell, 2005). The 28% increase from 2003 to 2004 was primarily attributed to the significant amounts of time and money spent by public companies to comply with the requirements of SOX, and the accounting mistakes caught in the process (Bryan, Lilien, Ruland & Sinnett, 2005). The number of companies reporting earnings restatements ballooned to approximately 1,200 in 2005 primarily due to the implementation of SOX Section 404 (Farrell, 2005). Section 404 requires the outside auditor and the company's top brass to annually certify the soundness of internal financial-reporting controls (Gullapalli, 2005). However, 56% of the accounting mistakes identified was simply the result of human errors (Plourd, 2008).

Montaña (2007) noted that most corporate commentators concede benefits of various kinds from SOX especially in the financial controls and reporting areas. This led private companies and not-for-profit organizations to recognize the effectiveness of various SOX provisions and have applied certain requirements (such as an audit committee and independent internal control assessments) as best practices (Elson, O'Callaghan & Walker, 2007)

The Sarbanes-Oxley Act and Local Governments

Most local governments are not as proactive and instead rely on existing structures and controls to ensure accountability and transparency in the management of taxpayers' resources. General purpose local governments rely on taxes levied upon their citizens as their primary revenue source. Too often the assumption is that if taxpayers do not face tax increases then the local government is exercising its fiduciary responsibilities. However, this assumption is flawed as local government faces tremendous pressures to identify and control the financial abuse and political pressures faced by elected and appointed officials.

Local governments may not have adequate internal controls over financial accounting and reporting in such areas as the awarding of contracts and access to cash and sensitive data. The lack of adequate controls has led to scandals and corruptions in local government which in turn has reduced taxpayers' confidence in their elected officials. It is important to remember that citizens invest in governments through taxes and receive dividends in the form of a well run government (J. Fretti, personal communication, July 19, 2007).

Another frequently overlooked stakeholder is the municipal bond holder. Many local governments issue municipal bonds as part of the approximately $2.4 trillion municipal bond market (Greenhouse, 2008). These bonds are purchased by individual investors who are relying on the integrity of the financial accounting and reporting controls in the governmental entity. Therefore, it is critical for local governments to have adequate controls in place to ensure accountability and transparency of financial information.

Perhaps the solution resides in SOX. We believe that certain requirements in SOX could be adapted by local governments without any significant cost increase to taxpayers. The benefits are tremendous: an increase in oversight, accountability and transparency in the operations of a local governmental entity.

Other researchers notably Czaja (2005) and George (2005) explored extending SOX reforms to nonpublic companies. However, the researchers addressed establishing audit committees and the impact of SOX on the nonpublic organizations' independent accountants and not the themes explored in this paper.

This paper discusses some of the recent scandals within local government and current practices that are in place to ensure accountability and transparency. Since these practices are not always effective, we offer an alternative approach based on SOX to improve oversight and accountability. These are establishing an audit committee, obtaining the CEO/CFO certification of financial reports, management's assessment of internal controls, and adopting a comprehensive code of conduct policy.

LOCAL GOVERNMENT SCANDALS

Scandals and local government seems to coexist in harmony and seem to thrive in some cities. For purpose of this paper, scandals refer to the different types of corruption found in local government – bribery, extortion, embezzlement (misappropriation of assets), nepotism and patronage systems. Atlantic City New Jersey, with its glistening casinos, poor constituents and on going political scandals is one example of the challenges faced by local governments. New Orleans, Louisiana, is another major city with public disclosure of government corruption in recent years. In fact, its city council senior member pleaded guilty to federal charges for accepting approximately $19,000 in bribes and kickbacks from a local businessman who was trying to keep a city parking lot contract (Nossiter, 2007).

Yet, the abuse of funds and power in local government varies and is seen across government of all sizes. The daily papers are filled with stories of local governments and their officials caught up in corruption scandals often involving the misuse of taxpayers' funds. One of the most spectacular problems in local

government occurred in December 1994 involving Orange County, California. It became the largest local government in U.S. history to declare bankruptcy. This bankruptcy resulted from the loss of approximately $2 billion from a highly leveraged and risky derivatives strategy, not fully understood by county managers (Trujillo, 1996).

While the above may be an extreme situation, there are many other examples of corruption which resulted from poor oversight and accountability in local government. One recent example occurred in early 2007 in the City of San Francisco, California. Its mayor was engrossed in a political scandal involving a married woman, his former appointments secretary, and the wife of his campaign manager. Certain termination benefits of approximately $10,000 received by the secretary (who resigned) are being challenged by constituents to ensure their legitimacy. The campaign manager also resigned from the mayor's reelection team (McKinley, 2007). In a separate case also in 2007, the elected treasurer of Alcona County, Michigan embezzled approximately $1.2 million from the county's investment accounts. The funds were invested and lost in a Nigerian investment scam (Schaefer & Lam, 2007).

In 2007, the city of Camden New Jersey, reported that the payroll for its approximately 1,300 employees was kept manually and that there was no mechanism (e.g., time clocks) in place to track employees' starting and finishing times (Capuzzo, 2007). Clearly, this situation could lead to payroll related fraud. Another recent example is the 33 count fraud and corruption charges filed against the former mayor of Newark, New Jersey. The charges against this 20 year mayor included misusing his office, billing taxpayers at least $58,000 for personal travel and entertainment including stays at the Ritz-Carlton in Miami and the rental of a Rolls-Royce to go shopping for a new yacht (Kocieniewski, 2007). This mayor was recently convicted on five counts of fraud including conspiracy to rig the sale of nine city lots to his mistress, who quickly resold them for hundreds of thousands of dollars in profit (Whelan & Martin, 2008).

And still other examples exist. A Hollywood, Florida county commissioner was charged with five felony corruption counts for helping a sewage processing company win an $18 million contract from the city (Holland & Wyman, 2006). In 2005, A Draper, Utah city employee was charged with diverting city funds of approximately $43,000 to her own bank account (Utah, 2005). In 2004, the mayor of Cecil, Georgia, a town with a population of 265, was forced to resign after receiving loans of approximately $42,000 on behalf of the town which he converted into personal use (Agostin, 2004).

Also in 2005, a former Salt Lake City county manager was charged with using public funds to hire an employee to work for her daughter at a private, nonprofit group (Utah, 2005). A former Davie, Florida town administrator was charged in 2005 with stealing approximately $500,000 of taxpayer funds (Waller, 2006).

LOCAL GOVERNMENT STRUCTURE

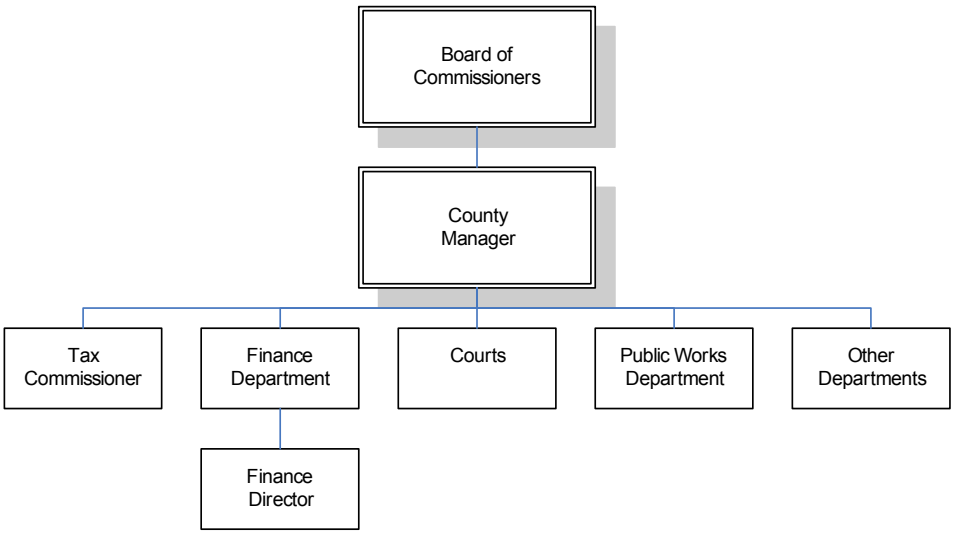
The number of local governments within the United States is fairly large with a variety of structures e.g., urban such as New York City, New York and rural such as Bulloch County, Georgia. The 2002 United States Census reported 87,525 local government units, which includes 3,034 counties, 19,429 municipalities, 16,504 towns and townships, 13,506 independent school districts and 35,052 special district governments (U.S Census Bureau, 2002). For instance, New York has approximately 57 counties while the State of Georgia, a smaller state, has 159 counties. The state of Georgia also has approximately 485 unique cities listed on its website.

In terms of this paper, local government refers to general purpose local governments such as cities, counties, villages, towns and townships and component units; the number of which will vary by state and size. Since local governments vary by size, there will be some flexibility and inconsistency in their organizational structure. This lack of uniformity creates some challenges in any reform that is proposed. However, the local government's organizational structure will be similar to the discussion that follows. The organizational structure of the city council for a large local government is provided for illustrative purposes as Appendix A.

Each county is governed by a Board of Commissioners ("the board"), elected by the citizens within that county. The numbers of commissioners are determined by the number of districts within the county and usually there is one commissioner per district. A commissioner is generally elected by the constituents or selected by the other commissioners to serve as chairperson of the board, and this person presides over all board meetings. The board's responsibilities include determining the annual budget of the county, and voting on all proposed loans, grants, bond issues, land acquisition and sales, zoning changes, traffic control issues and mayoral appointees.

The day to day running of the county is the responsibility of the county manager or equivalent who acts as the chief executive officer (CEO). A finance director, the equivalent of a chief financial officer (CFO) in a for-profit organization, supports the board by advising it and the county manager on the financial status of the county. In some counties, the finance director reports directly to the board. The finance department manages the financial transactions of the county government on behalf of the taxpayers and the board. A basic organization chart for a county government is depicted in Figure 1.

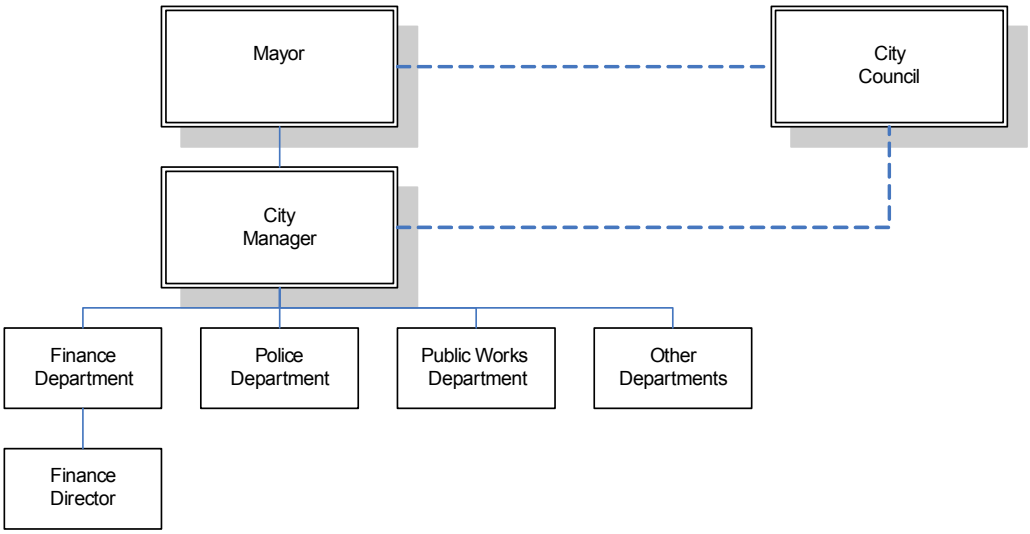
Figure 1: Organization Chart – County Government



Most cities are headed by an elected official, the mayor, who serves for a specific term as defined by the city's charter. This individual is equivalent to the Chairman of the Board in a for profit organization. The mayor is supported by a body of elected officials representing different constituents within the city, called the city council ('board"). The actual chief executive (CEO) of a city government is the city manager or

equivalent (this role is performed by the mayor in larger and very small cities) who runs the city on a day to day basis. The city manager is supported by a finance director or equivalent (e.g., treasurer) which is similar to a CFO in a for profit organization. A basic organization chart for a city government is provided in Figure 2.

Figure 2: Organization Chart - City Government



CURRENT OVERSIGHT REGULATIONS

Local governments generally prepare an annual fiscal budget of their estimated revenues and appropriations (estimated expenses) prior to the start of the fiscal year. There is a public meeting (as required by state law) in which the budget is discussed prior to its approval and constituents are encouraged to attend the meeting and voice their concerns. These meetings are generally poorly attended unless there are some controversial items such as tax increases proposed in the budget. Once the public has a chance to discuss the budget, it is approved by the city council, adopted into law and authorizes the local government to transact business on behalf of its constituents. More information on the legislative process for a large local government is provided as Appendix B.

Often elected officials are asked to approve complex and sophisticated financial transactions as part of the budget and financial reporting process. However, they may not have the appropriate skill sets and must rely on management personnel (of the local government) for advice on such transactions. This creates a potential conflict of interest because the elected officials are obtaining advice from the same managers they are expected to oversee.

Board members may not have the background necessary to understand financial issues within the government and may approve budgets without much debate or dialogue. For instance, budget discussions surrounding the issuance of municipal bonds and its impact on current and future generations, may not be fully understood. Instead, in some local governments, budget meetings quickly move away from the budget to matters that can be easily understood by board members such as zoning issues.

Audit committees are not consistently established in local governments to monitor financial accounting and reporting controls. As a result, the existence and/or effectiveness of the internal control environment may be not sufficiently addressed at board meetings. A review of selected websites supports our position on the existence of audit committees. For instance, the City of Atlanta's 2006 CAFR shows the existence of an audit committee but it had no direct or indirect interface with the city council per the organization chart (City of Atlanta, 2008). The city's internal auditor was the only direct report to the audit committee. A separate finance committee existed within the city council but its role was not defined. New York City's city council also included a finance committee but the website showed no audit committee. The finance committee which is comprised of board members, had responsibility for the executive budget review and oversight of various departments including the Department of Finance and the Comptroller's Office.

Local governments are taking some steps to increase transparency and accountability in the budget process. For instance, Rivera, (2007) noted that the City of New York identified the council members who sponsored the various discretionary appropriations for pet projects in its 2008 fiscal year budget. This amounted to 1,674 unique projects totaling more than $36 million (part of a $59 billion budget). Pet projects are a common practice in most local governments but these are often grouped with other items in the budget.

Also, local governments often operate with a small staff in order to reduce overall expenses and ultimately the tax burden to the taxpayers. As a result, incompatible functions may not be adequately safeguarded providing an opportunity for managers and other personnel to misappropriate assets. The previous section highlighted examples of fraud perpetrated by government personnel perhaps because of lax oversight.

At the end of the fiscal year, most local governments are required by governmental accounting standards to prepare a comprehensive annual report or CAFR to account for the actual revenue earned and expenses incurred. Depending on the size of the local government, an independent accountant is engaged to perform a financial statement audit. In some states, an entity at the state level performs the financial audit. For instance, in Georgia the state auditor performs an audit of entities that elect not to file a CAFR and reviews the audited statements of all local governments within the state to ensure compliance with certain programs and SPLOST referendums.

The CAFR is generally filed with the state's auditor's office and can be requested by the citizenry. Local government's are also encouraged as a best practice to prepare a simplified version of their CAFR (the popular annual report or PAFR) to be made available to the constituents. However, the reports are generally available on the government's website and are not mailed to tax payers.

In the current electronic age, states are publishing the CAFRs and other financial reports of local governments on their websites so they can be available to a wider audience. Unfortunately, taxpayers are either not aware of the existence of these documents or navigating the state's websites to view them is so cumbersome that they do not take advantage of the opportunity. Also, CAFRs are very complex and may not be understood by taxpayers who retrieve them. As a result, taxpayers do not know how tax revenue collected by local governments are actually spent and instead rely on elected and appointed managers to exercise their fiduciary responsibilities.

Although a code of ethics or conduct may exist in local governments, they are not always available to stakeholders in a public space such as websites. This was confirmed in a random review of five local government's websites (City of Atlanta, New York City, Chicago, Hudson County, New Jersey, and Fulton County, Georgia).

The internal controls within a local government are not generally subject to an independent assessment. However, local governments that receive federal grants are subject to audit under the Single Audit

Act ("the Act"). Part of the Act's requirement is for the auditor to obtain an understanding, and assess and test the internal controls surrounding each major program receiving federal funds (Government, 2007). However, Single Audit procedures may not be effective in identifying control or compliance issues.

A recent study on the quality of audits conducted under the Act by external auditors estimated that only 48.6% of the entire universe of single audits was considered acceptable. The most common deficiencies reported included the auditors (a) not documenting their understanding of the entity's internal controls over compliance requirements and (b) not documenting their internal control testing of at least some compliance requirements. (Sampling Project, 2007).

The United States Government Accountability Office revised its auditing standards in early 2007 with an effective date of January 1, 2008 for financial, attestation and performance audits. Among the revisions are guidelines to auditors on how to define and report on internal control weaknesses in government audits. However, we believe this is still inadequate since the guidance is directed at auditors and not management. Perhaps the solution to improve oversight and accountability already exists - The Sarbanes Oxley Act of 2002 (SOX).

Local government accounting standards are established by an independent body, the Government Accounting Standards Board or GASB. GASB's standards are adopted by the states on a voluntary basis and it has no enforcement authority if a local government violates the standards. Enforcement comes from the state allowing variations in the quality and level of oversight. GASB is also facing pressure on its usefulness by the Governmental Finance Officers Association, the body which provides GASB's funding. The Securities and Exchange Commission (SEC) believes that GASB is the right body for providing oversight of governmental entities and it is in the process of discussing with the United States Congress new ways of empowering GASB to perform its oversight function especially in the area of financial reporting and disclosures (Walsh, 2007).

IMPLEMENTING SOX PROVISIONS IN LOCAL GOVERNMENTS

We believe local governments could implement certain SOX requirements (specifically audit committees, certification of annual reports, management assessment of internal control over financial reporting and code of conduct and ethics policy). The adoption of audit committees in the private sector has been addressed by two oversight bodies – the American Institute of Certified Public Accountants and The Government Finance Officers Association. However, these were offered as a best practice rather than a mandate and few if any local governments have established audit committees.

We believe local governments should implement the SOX provisions in order to increase accountability and transparency and provide stakeholders with additional assurance that resources are adequately managed. Guidance on implementing the SOX provisions is provided in this section.

Audit Committee

SOX require each member of the audit committee of public companies to be independent of management. It also requires that at least one of these members be financially literate (Lander, 2004). This is important since the audit committee is responsible for the appointment, compensation, and oversight of the work of the accounting firm. In practice, the audit committee is responsible for oversight of the financial accounting practices and controls in public companies.

City councils and boards of commissioners serve as the board of directors ("boards") of local governments. As a result, they are currently responsible for financial accounting oversight such as approving annual budgets, approving the independent accountants, and reviewing and approving CAFRs and other financial reports. However, the board members are elected officials and may not have the appropriate skills required to understand the complexity of financial accounting transactions as noted in an earlier section.

The primary function of the audit committee is that it institutionalizes the governing body's involvement with internal control and financial reporting thereby ensuring that both topics are periodically addressed by the governing body (Gauthier, 2007). It may not be economically feasible for all government entities to establish an audit committee. Therefore, we believe that local governments receiving tax revenue of at least $1,000,000 should establish an audit committee of at least 3 members. This is a major change for some organizations and guidance on the role of the audit committee is provided in the following paragraphs.

The AICPA's Audit Committee Toolkit (www.aicpa.org) is an excellent resource for local governments interested in establishing an audit committee. Audit committee members should be appointed by the board and at least one member should have financial experience ('financial expert"). However, it is critical that the financial expert's education and experience be especially relevant to the government sector (Gauthier, 2007).

Similar to for-profit organizations, the audit committee would be responsible for the appointment, compensation, and oversight of the work of the independent accountant engaged by the local government for external reporting. Audit committee meetings should be held on a regular basis with a minimum of four per year with additional meetings as needed. The meetings should include separate executive sessions with the following as needed - independent accountant, the chief executive and financial officers, the chief audit/internal auditor, the general and/or outside counsel and any other personnel desired by the committee. The purpose of these meetings is to discuss any accounting and legal/regulatory issues affecting the government entity.

The audit committee should review with management policies and procedures with respect to public officials' and management's use of expense accounts, public funds and property (e.g., the use of government vehicles for personal use). The audit committee should be involved in the development of and amendment to the entity's code of ethics policy. Also, the hiring, replacement, or dismissal of the chief auditor should be reviewed and concurred on by the audit committee for those local governments with an internal audit function. The audit committee should also ensure that there is an anonymous mechanism for employees, vendors, and taxpayers to report concerns directly to the audit committee or other appropriate body. Anonymous 24 hour hotlines are offered by a number of third party vendors and are ideal for this purpose. In addition, all reports issued by the internal audit function should be provided to the audit committee.

Local governments would need to allocate financial resources for the effective functioning of the audit committee. In order to achieve its mission, the audit committee should be authorized by the board to hire professional consultants as necessary. The role of the consultants should be defined in an engagement letter or agreement and they would be paid from the committee's financial resources.

Certification

SOX also require the CEO and CFO of public companies to certify the quarterly and annual reports that are filed with the Securities and Exchange Commission. The certification includes statements that (a) the individuals have read the report, (b) the report does not contain any untrue statements or omit material facts,

based on their knowledge, (c) they are responsible for establishing and maintaining internal controls and they have evaluated the controls' effectiveness (Lander, 2004). SOX impose significant monetary penalties and other fines on the CEO and CEO for misleading certifications.

We believe that local governments should adopt the certification process in SOX by requiring the CEO and CFO or equivalent officers to provide an annual certification on the CAFRs or other financial reports issued by the reporting entity.

Therefore, the county and city managers (as CEOs) (or chief elected official when there is no manager) along with the respective finance director (CFO) should provide separate certification on the specific local government's financial statements at least annually to the board and taxpayers. At a minimum, the certification should include statements that (a) the individuals have read the report, (b) the report does not contain any untrue statements or omit material facts, based on their knowledge, (c) they are responsible for establishing and maintaining internal controls and they have evaluated the controls' effectiveness. The CEO and CFO should rely on the internal control assessment as part of the certification process.

The certification should be provided to the mayor and board on an annual basis and filed in the supplemental information section of the CAFR. To ensure the effectiveness of this process, the managers would face monetary penalties and other fines (as defined by the board) for providing false and/or misleading certifications.

Internal Control Assessment

One of the more controversial SOX requirements is for companies to include in their annual reports a report on management's assessment of its internal control over financial reporting. This report includes a statement a) that management is responsible for establishing and maintaining adequate controls, b) identifying the framework used by management to conduct its assessment, c) on management assessment of its controls, and d) a statement that the independent auditor has attested and reported on management's internal control assessment (Lander, 2004).

Internal control may not be an area that is fully understood by local government personnel. Internal control simply refers to a process implemented by the board, management and other personnel. It is designed to provide reasonable assurance regarding the achievement of objectives in three areas: the reliability of financial reporting, the effectiveness and efficiency of operations, and the compliance with applicable laws and regulations. There is an excellent resource (www.coso.org) for local government personnel interested in learning more about risk assessment and internal control.

A department head is responsible for the internal control environment within the business or department under his (her) control. Therefore, an internal control assessment should be performed quarterly by each department head or designee under the supervision of the finance department. The assessment should identify the key control(s) in the process and the controls should be tested to ensure their effectiveness. The assessment should be risk based with emphasis placed on areas of highest risk. An example of a high risk area is the local government's procurement function, especially the procedures and controls over the initial vender selection and approval process and the bidding process. The finance manager should provide a quarterly report to the mayor and board of any significant control weaknesses identified in the internal control assessment.

Code of Ethics

SOX also requires public companies to disclose whether they have adopted a written code of ethics for the company's principal executive and financial officers, and principal accounting officer or person performing similar functions (Lander, 2004). These codes of ethics should contain standards designed to deter wrongdoing and to promote such behaviors as honest and ethical conducts, and compliance with laws, rules and regulations. The code of ethics should be disclosed in a public place such as in the annual reports or on the company's website.

Clearly this SOX provision could easily be extended to local governments. The local government should develop a code of ethics in conjunction with the board, using the language in SOX, covering the board and all employees. The adoption of a code of conduct is important since it is a fundamental step in the attempt to improve the ethical culture and to prevent unethical and fraudulent behavior within the organization (Rotta, 2007).

The local government should ensure that at a minimum that all key personnel such as its county manager and finance director have read and signed the code of ethics. The initial code and all amendments should be approved by the board. The code of ethics should address issues such as the local government's gift acceptance policy; loans to board members, officers and employees; influence peddling; use of government resources for personal purposes; the contract bidding and request for proposal process; as well as the government's whistle blower protection policy.

The local government's code of ethics should be provided to each new employee who must acknowledge that they have received and read it. An ethics hotline should be established so that ethical violations can be reported. To ensure it effectiveness (i.e., privacy and confidentiality of information), the hotline should be monitor by an external party such as the outside counsel (if there is an existing relationship). As an alternative, the human resources director could perform this role. Information on the ethics hotline should be include in the code of ethics and the number provided to all employees, elected officials and vendors.

Also, all elected officials and key personnel should be required to file an annual financial disclosure statement. The statement would identify and disclosure assets and income source that could create actual and potential conflict of interests between the individual's official duty and the entity. The disclosure statement should be web based to encourage its use and a deadline given to ensure its timely completion. The local entity should establish penalties (monetary and criminal) for delinquent fliers.

The finance and human resources directors should be assigned joint responsibility of ensuring that the code of ethics is current and communicated to all applicable parties. Larger governments should consider appointing an ethics officer or equivalent to establish and monitor its ethics program.

CONCLUSION

The Sarbanes-Oxley Act of 2002 (SOX) was enacted in response to management fraud in Corporate America. Private companies and not-for-profit organizations recognized the effectiveness of various SOX provisions and have applied certain requirements (such as an audit committee and independent internal control assessments) as best practices. However, local governments are generally not as proactive and instead rely on existing structures and controls to ensure accountability and transparency in the management of taxpayers' resources.

Scandals and other inappropriate business practices continue to waste tax dollars and reduce confidence in local governments of all sizes. Clearly, there is a need for more oversight to ensure accountability and transparency in order to protect stakeholders' interests. This paper suggested four areas in which SOX provisions could be implemented by local governments in a cost effective manner to increase accountability and transparency to stakeholders. The areas are establishing an audit committee, the CEO/CFO certification of financial reports, management's assessment of internal controls, and the local government adoption of a comprehensive code of ethics policy.

The potential for fraud and abuse that SOX is intended to control is not confined to publicly traded companies. Local governments should adopt the provisions of the Sarbanes Oxley Act discussed in the paper to improve accountability and transparency. This will protect citizens' investment in their government and ensure that dividends are paid to stakeholders in the form of a well run government.

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Appendix A: Local Government Structure - The New York City: City Council

The Role of the City Council

The New York City Council is the law-making body of the City of New York. It is comprised of 51 members from 51 different Council Districts throughout the five boroughs. The Council monitors the operation and performance of city agencies, makes land use decisions and has sole responsibility for approving the city's budget. It also legislates on a wide range of other subjects. The Council is an equal partner with the Mayor in the governing of New York City.

Budget

The budget is the centerpiece of policymaking in government. Through the budget, the Council establishes priorities, allocates resources and sets the policy agenda for the year. It is the single most important municipal document that affects the lives of New Yorkers. While the mayor proposes the city's spending priorities for the upcoming year, the Council has final budget approval powers. During the budget process, the Council may change budget priorities and add special "terms and conditions" requiring city agencies to report to the Council on how specific monies are being spent throughout the year.

Land Use

Under the 1990 Charter revision, the Council acquired the power to review land use issues and approve zoning changes, housing and urban renewal plans, community development plans and the disposition of city-owned property. This power gives the Council the most significant voice in the growth and development of our city.

Oversight

The Council holds regular oversight hearings on city agencies to determine how agency programs are working and whether budgeted funds are being well spent.

Legislation

As the legislative body, the Council makes and passes the laws governing the city. The Council has passed landmark legislation on designated smoking areas in public places, campaign finance, anti-apartheid, solid-waste recycling and restrictions on assault weapons. Legislation pending in the Council is called an Introduction, often abbreviated to "Intro" or "Int", and is assigned a number. When an Introduction is signed by the Mayor it becomes a Local Law and is assigned a new number.

The Committee System

Most of the Council's legislative work is done in committee. It is there that proposed legislation is initially debated and the members of other government branches and the public are given a chance to comment.

Each Council Member serves on at least three of the Council's standing committees, sub- and select committees and panels. The standing committees must meet at least once a month unless the Charter mandates otherwise. Committee assignments are made by the Committee on Rules, Privileges and Elections and voted on by the entire Council.

Most Council hearings are held in the Council Chambers or the adjoining Committee Room in City Hall. Hearings are also held in the Hearing Room on the 16th Floor of 250 Broadway. Meetings of the entire Council, referred to as Stated Meetings, are held twice a month at City Hall. A weekly schedule of Council hearings is available in the Council's Office of Communications in City Hall.

The Speaker of the Council, the Majority Leader, the Minority Leader, and Public Advocate are ex-officio members of all committee.

The Council Speaker

The Council Speaker is elected by the Council members and is primarily responsible for obtaining a consensus on major issues.

The representative for the position of Minority Leader is elected from among the party with the next largest representation.

Although not a member of the Council, the Public Advocate presides at the Council's Stated Meetings and votes in the case of a tie. In the Advocate's absence, the Speaker presides or designates a presiding officer, or the body may elect from among its membership a President Pro Tempore to preside.

The Rules of the Council

The City Council is governed by a body of rules

Source: http://council.nyc.gov/html/about/about.shtml

Appendix B: The City of New York City Council: Legislative Process

Bills

- A bill (proposed legislation) is filed by a Council Member with the Council Speaker's Office.
- The bill is then introduced into the Council during a Stated Meeting and referred to the appropriate committee. One or more public committee hearings maybe noticed and held on the proposed legislation.
- After public testimony and committee debate the bill may be amended.
- The committee votes on the final version of the bill.
- If passed in committee, the bill is sent to the full Council for more debate and a final vote.
- If passed by an affirmative vote of a majority of all Council Members (at least 26 members) the bill is then sent to the Mayor, who also holds a public hearing.
- The Mayor then chooses to sign or veto the bill.
- If the Mayor does sign the bill, it immediately becomes a local law and is entered into the City's Charter or Administrative Code. The time before a new law becomes effective will vary from law to law.
- If the Mayor disapproves/vetoes the bill, he or she must return it to the City Clerk with his or her objections to the Council by the next scheduled Stated Meeting.
- The Council then has 30 days to override the Mayoral veto.
- If the Council does repass the bill by a vote of two-thirds of all Council Members (at least 34 members), it is then considered adopted and becomes a local law.
- If the Mayor does not sign or veto the bill within 30 days after receiving it from the Council, it is considered approved automatically.

Introductions

As the legislative body, the Council makes and passes the laws governing the city. The Council has passed landmark legislation on campaign finance, anti-apartheid, solid-waste recycling and restrictions on assault weapons. Legislation pending in the Council is called an Introduction, often abbreviated to " Intro " or " Int ", and is assigned a number.

For example:,*Intro 1 of 2004* would improve the NYC Pro-Voter Law by requiring all city agencies to provide training of employees on how to increase voter registration outreach efforts.

Local Laws

When an Introduction is signed by the Mayor it becomes a Local Law and is assigned a new number.

For example:, *Local Law 1 of 2003* focused on creating cleaner streets by increasing fines for litter violations.

Local Laws may also be enacted over the objection of the Mayor through the veto override process. In this case, when the Mayor vetoes a proposed law, the Council can enact the law with a two-thirds vote.

For example, in 2003 the Council put in place a requirement in *Local Law 24* that the Department of Education provide periodic updates on the progress of all school capital projects.

Resolutions

Resolutions are used by the Council as a vehicle for legislative action and to express the sentiment of the body on important public policy issues. These issues may or may not fall under City jurisdiction.

Resolutions are used to adopt land use decisions on matters that vary as widely as down zoning a geographic area in Staten Island to a tax exemption for an affordable housing project in the Bronx.

Resolutions are also used to adopt the annual City budget for both expense spending and capital spending.

Finally, resolutions are used to discuss issues that are of concern like *Reso 866 of 2003* calling on Congress to provide New York City with a "fair share" of Homeland Security funding.

Source: http://council.nyc.gov/html/about/legislative.shtml

AN OVERVIEW OF ACCOUNTING DEVELOPMENTS IN ARCHAIC AND CLASSICAL GREECE

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ABSTRACT

By the seventh century B.C.E., Sparta and Athens had developed from small towns ruled by monarchies to major city-states wielding political and economic power. Sparta, ruled by a small group of landowners, adopted a militaristic, austere, authoritarian, isolationist approach to government. With an ethic that devalued materialism and a currency based on iron, trade with other city-states languished. Athens, however, encouraged open trade, valued wealth accumulation, and established a currency based on precious metals. The availability of currency and an established exchange rate with other currencies increased the velocity of global trade and Athens developed into a commercial empire. It needed, and created, accounting systems that held leaders and public servants accountable for the public funds they spent—a social responsibility accounting system. Athenians used it to record, track, and assign responsibility for money spent on public works projects such as the Parthenon. In the mid fifth century B.C.E., Pericles, Princeps of Athens, spent funds collected from other city-states for protection from invasion by Persia on his own building projects, including the Parthenon. Accused of misappropriation and called to account, he promoted war with Sparta to create a diversion.

Mercantile accounting developed with the rise of the merchant class. Merchants created accounting systems to count inventories, calculate profits, control assets, and satisfy government regulators. However, the number of people possessing accounting skills was insufficient to maintain control of an expanding economy and corruption took hold. The seeds of eventual decline were sown.

INTRODUCTION

By the end of the second millennium B.C.E., a combination of famine in the Near East, depletion of natural resources by palatial estates, and raiding by the Sea-People led to the decline of Greek influence. During this Dark Age (1100—800 B.C.E.), the extensive trade that had made Greece prosperous virtually ceased. (This section and the following taken from Pomeroy, Burstein, Danlan, & Roberts, 1999.) But between the eighth and fourth centuries B.C.E., city-states arose and trade between them began. Trade brought on wealth during these Archaic (800—490 B.C.E.) and Classical periods (490—323 B.C.E.). With wealth, the socio-political environment changed and Greek intellectual life expanded. Medicine, mathematics, philosophy, and the arts flourished.

About 800 B.C. E., writing, based on the Phoenician alphabet, reappeared. Trade required methods to identify and document goods. In response, scribes developed accounting systems to track inventory and record transactions.

The developing city-states' affluence and political structure necessitated an accounting system that assigned social responsibility. Each political unit relied on public funds from taxes and tribute to function.

In the past, bureaucrats reported to Mycenaean palace kings. Now, however, citizens of these developing democracies held their bureaucrats accountable to them only. And contractors, constructing such public projects as temples, were required to delineate the origins of their funds. The state held them accountable for proper disbursements of these funds (Murray, 1988).

To facilitate the responsibilities associated with collecting and spending public monies, the Archaic Greeks created a recording system. They established a formal social responsibility accounting system for state functions as well as an accounting system for merchants and trade (Murray, 1988).

SPARTA AND ATHENS

In terms of economic development and materialism, no other city-states appear more diametrically opposed than Athens and Sparta. The Greek cities began as monarchies with a small class of landowners holding power. With the rise of a mercantile class, populist leaders began to overthrow the monarchies. In Sparta, however, the landed aristocracy retained power. By 500 B.C.E., Sparta had selected a militaristic, austere, authoritarian approach to government that resulted in a form of commercial isolationism (this section and the following from Talbert, 1988). Sparta's aristocracy encouraged citizens to spurn materialism. Indeed, Spartan law and customs mandated an anti-materialistic approach such that the acquisition of material goods was deemed unimportant. Spartan law also required that its citizens serve in the army with service as a soldier the highest possible calling in Spartan society. Moreover, its citizens were not permitted to become artisans or practice any other trade.

To stifle free trade with its accompanying materialism, Spartan law mandated a currency consisting of iron bars rather than the more traditional gold and silver coinage. Although valuable for weapons and tools, iron possessed limited utility as a currency. For example, compared to silver or gold, iron wasn't scarce thus had relatively minimal intrinsic value. The size of an iron bar required to trade for valuable goods was large and heavy and such trade demanded several huge ingots. And then, iron rapidly oxidizes into rust.

A currency system based on iron proved counter-productive to a viable and enduring trading system. The combination of anti-materialistic cultural values and iron currency diminished a Spartan citizen's desire for accumulating material wealth in the form of iron bars. Yet wealth was needed to advance a civilization and thereby motivate traders to develop accounting systems. Note, however, that Spartan records, though sparse, do document an accounting system focusing on property, taxation and revenues.

Athenians, in contrast, employed open global trade, imperialistic policies regarding its neighbors, and the accompanying accumulation of wealth over isolationism (see Fornara, 1977 and Frost, 1971 for this and the next section). And Athenian citizens were under no cultural or legal constraints limiting the acquisition of wealth. By 683 B.C.E., a democratic government replaced the aristocracy.

To facilitate trade and related governmental functions, Athens based its economic transactions on more traditional and universally accepted currencies of precious metals. Merchants needed a universal medium of exchange beyond a barter system to support a variety of economic transactions. Coinage served as this medium of exchange.

Coinage had first appeared in Asia Minor in Lydia around 700 B.C.E. (The discussion on coinage from Frost, 1971). Initially, gold, silver, copper and bronze bullion were offered in trade for goods. To guarantee its purity a government stamped a hallmark on the metal, usually the likeness of a king or local ruler. Over time, the stamping evolved into coinage. Apparently, the kingdom of Lydia was the first state to

guarantee both the weight and purity of pieces of metal by minting standardized currency marked with the symbol of the realm.

The convenience of coins and universal acceptance of precious metals made coins highly efficient for conducting economic transactions. In addition, coins possessed intrinsic value. Beyond serving as a medium of exchange, coins were utilized in the creation of jewelry and artwork.

Archaeological evidence, for example wording on the Parian Marble, documents the use of coinage among the early Greeks. Translations of the Parian Marble, in addition to the writings of Pausanias, Herodotus and others, record the first mint created by King Pheidon at Aegina that struck silver coins.

The availability of coinage and resulting monetary system affected the velocity of trade and accounting development. To assist merchants with trading endeavors, moneychangers appeared in city markets. These moneychangers acted as bankers by exchanging foreign currencies and granting loans to merchants. Ship owners, for example, borrowed money to purchase and outfit their vessels and merchants sought funds to pay for space in a ship's hold (Frost, 1971, pp. 64-65). Moneychangers also weighed and assigned value to foreign currencies. They created, first, partnerships and then corporations to carry out various banking functions so that by the end of the fourth century banking corporations existed in every commercial city of the Greek world. Mercantile centers arose from the city-state marketplaces, from Corinth, Samos, and Ionia to the Emporion in Spain, the new Hellenistic settlements of Alexandria in Egypt, and Seleuceia in Mesopotamia."

To advance its economy and develop merchant trade, a city-state controlled its coinage. A fifth century decree enforced the use of Athenian coins, weights, and measures. The following, from Fornara (1977), is a reconstructed version.

> *This decree shall be set up by the governors in the cities, after having inscribed it on a stele of marble, in the market place of each city..."If someone coins money of silver in the cities and does not use Athens in coins or weights or measures but used instead foreign coin and measures and weights, I shall exact vengeance and penalize him...Anyone shall be allowed to turn in the foreign money which he possesses and to convert it in the same fashion* (pp. 102-104).

The decree required foreign traders to obtain Athenian coins for trade. As a result, the demand for Athenian currency escalated and an economic multiplier effect rippled through the Athenian economy. In this way, Athens controlled the velocity of money throughout its empire.

Trade was necessary for Athens to grow into an empire. Limited arable land and other natural resources were insufficient to maintain an expanding population. At the height of her imperial thalassocracy, nine-tenths of her timber and two-thirds of her cereal grains were imported. Merchant vessels approaching 250 tons ranged throughout the Aegean and Black Sea and Greeks established settlements throughout the Mediterranean (Green, 1972).

Ionian colonies soon appeared as far north as the Black Sea area, and the exchange of trade items and culture with Southern Europe became common. Greek merchants eventually appeared almost everywhere in Southern Europe and the Near-East, protected by a strong naval presence of war ships.

When did the merchant class develop a system of accounting to keep track of its individual economic transactions? Initially, accounting developed to serve the needs of the ruling class. Knowledge of palatial receipts and expenditures enabled an aristocracy to maintain control of its redistributive economy. And from

Sumeria to Mycenaean Greece, accounting developed from a token-based system to an advanced written accounting system utilizing Linear B script (Schmandt-Besserat, 1992; Wood, 1985).

However, with the rise of the merchant class, and as transactions become more complex, an individual merchant needed to become accounting literate and learn to use a recording system to control his/her economic resources and obligations. Earlier, Sumerian merchants utilized clay tablets to create a functional accounting scheme to track trade transactions. But by the fourth century B.C.E., as maritime trade expanded throughout the Aegean, a merchant based accounting system developed (Frost, 1971). .

SOCIAL RESPONSIBILITY ACCOUNTING

By the middle of the fifth century B.C.E., Athens had evolved into an Athenian Empire (the following from Fornara, 1977). To support the accumulation and allocation of economic wealth, Athenians needed to manage revenues and expenditures and to control their expanding trading empire. In meeting this need, Athenians developed an accounting system designed to assign financial responsibilities and accountability to specific individuals. That is, it demanded accountability from individual leaders and public servants. Financial responsibilities were not only assigned to a single person, but an assessment on the completion of these responsibilities was reported to citizens of the city-state. Athens, then, provided one of the first instances of social responsibility accounting

By the sixth century, social responsibility accounting had developed and spread throughout Greece. Engravings on monuments and writing on ostraca document its practice. For example, a marble stele discovered near Athens contains a tribute quota list carved in 454/3 B.C.E.. Tribute for the Pedasians was 200 drachma, the Astyrenians 8 drachma, 2 obols, the Byzantines 1500 drachma, Karmirians 900 drachma, and Thermaians in Ikaros 50 drachma (Fornara, 1977, pp. 82-3). Moreover, archeologists have found monuments, stele, documents, and ostraca dealing with the cost and construction of the Propylaia (entrance to the Acropolis) from 437/6 to 433/2 B.C.E., contributions to the Spartan War Fund at the beginning of the fourth century B.C.E., the appointment of tribute collectors in Athens in 426 B.C.E., and work on the Athenian water supply in the middle of the fifth century.

Translations of writing on a marble stele carved in 434/3 B.C.E. found near Athens deals with social responsibility accounting concerning construction of the Parthenon (see Fornara, 1977). These building documents may be an example of the oldest financial statement: that is, a Cash-Flow Statement or a Source and Application Statement.

> For the Commissioners, for whom Antikles was Secretary, in the (year of the) fourteenth Boule, in which Metagenes was first Secretary, in Krates' archonship (a form of government) over the Athenians (434/3), the receipts for this year (are) as follows:
>
> | | |
> |---|---|
> | Balance from the previous year | 1,470 dr. |
> | Gold Staters of Lamps acus | 7 dr. 4 ob. |
> | Gold starters of Cyzicus | 27and 1/6 dr. |
> | From the Treasures of the Goddess' | 25,000 dr. |

Treasury for whom Krates was secretary, of Lamptrai	(i.e., 4T. 1,000 dr.)
For contracting for the workmen at Pentelicus who also have the marble loaded on to the wagons	1,926 dr. 2 ob.
For sculptors of the pediment - Sculptures, the pay:	16,392 dr. (i.e., 2T, 4392 dr.)

Note that one drachma represented about one day's wages. Also, six obols (ob.) comprised one drachma (dr.), 100 dr. was equal to one mna and 6,000 dr. made up one talent (T). The first Parthenon account dates to 447/6 while the last to 433/2 B.C.E.

The Parthenon accounts document large and continuing construction expenditures for quarrying and moving marble 16 kilometers from Mount Pentelicus to Athens. For example, the expenditure "For contracting for the workmen at Pentelicus who also have the marble loaded on to the wagons" was 1,926 drachma. These expenses combined with other building costs associated with the Parthenon and Acropolis proved excessive and a scandal ensued. Accountability for the cost overruns almost caused the downfall of Pericles as Princeps (translated as First Citizen, but actually ruler of Athens)(Fornara, 1977).

Pericles was accused of inappropriate use of tax revenue, tribute, and Delian League funds for construction of the Parthenon. The Delian League was formed by city-states aligning themselves with Athens for protection from Persian invasion (Fornara, 1977). Pericles had moved the Delian League Fund, 9000 Talents, from the sacred city of Delos to the treasury at Athens around 454 B.C.E. (Buckley, 1996). This action, coupled with the Congress Decree of 449 B.C.E. (a meeting of the Delian

League members where Athens imposed her coinage dictates), may have created the largest embezzlement in human history (Vlachos, 1974).

Pericles explained that once the funds were received, the money belonged to the receivers—the Athenian government. The League members did not complain as long as Persia did not invade them. And since Persia did not invade, Pericles' accountability for League funds was limited to the people and officials of Athens.

Thucydides, a prominent politician, (not Thucydides the historian) called into question Pericles' expenditures of Delian League funds. He claimed that Pericles utilized these funds for his building program rather than in defense of League members. Allegations also accused Pericles of overindulgence, wasting funds and mishandling of public funds.

In truth, Pericles had used League funds for personal political objectives including funding his building program. But he responded that he would bear the costs from his estate and accountability would be in his name so that the finished buildings of the Acropolis would bear his name only, not the people of Athens. This spirited response surprised and energized Athenians to support Pericles' building program. They ostracized Thucydides and his conservative faction disbanded. Pericles' re-affirmed and expanded his power so that all affairs of Athens—armies, tributes, islands, etc—fell under his providence (Plutarch, XIV).

However, Pericles' building program still generated criticism. Though the Parthenon represented an example of superb Greek architecture, its greatness was attributable to architectural contradictions in its

construction that violated Greek building norms. These contradictions included curved lines in the floor structure and slanted and curved columns, inconsistencies that were mathematically contrived to make the Parthenon aesthetically pleasing. But the application of mathematical principles to the construction of the Parthenon increased construction time and costs.

Apparently, Pericles had misappropriated funds before. In describing his expedition against the Euboeans, Plutarch states the following.

> *When Pericles, in giving up his accounts of his expedition, stated a disbursement of ten talents, as laid out upon fit occasion, the people, without any question, nor troubling themselves to investigate the mystery, freely allowed of it. And some historians, in which number is Theophrastus the philosopher, have given it as a truth that Pericles every year used to send privately the sum of ten talents to Sparta, with which he complimented those in office, to keep off the war...*(Plutarch, XXIII)

Sending money to Sparta comprised an act of bribery and extortion, but was it for the purpose of delaying war? Pericles had used his discretion and misappropriated public funds to accomplish his personal political objective of appeasing Sparta. At the time political opponents challenged Pericles' explanations of the extortion scheme with Sparta. But his popularity and prestige held the auditors at bay and the citizens of Athens were largely indifferent to the auditor's conclusions.

Eventually, criticism that Pericles' mishandled public funds was leveled at him once again. Did Pericles cook the books to provide funds to build the Parthenon? Accounts had been altered and assets had been misappropriated from the Delian League Fund for Pericles' building program. However, would the accounts also reveal Pericles had overindulged and misused city-state funds? Pericles faced the Court of Athens. His political career was in jeopardy. But he wasn't about to give up. He needed to create a diversion. What better diversion than to start a war with Sparta? Pericles fanned the flames of war. Indeed, some said his "accounting problem" comprised the final variable that brought about the second Peloponnesian War with Sparta

> *. . . The people receiving and admitting these accusations and complaints, at length, by this means, they came to enact a decree, at the motion of Dracontides, that Pericles should bring in the accounts of the moneys he had expended, and lodge them with the Prytanes; and that the judges, carrying their suffrage from the altar in the Acropolis, should examine and determine the business in the city . . . being afraid of impeachment, he kindled the war, which hitherto had lingered and smothered, and blew it up into a flame; hoping, by that means, to disperse and scatter these complaints and charges. . .* (Plutarch, XXXII).

In truth, the accounting problem did not create the war. Long standing jealousy and rivalry between Athens, Sparta, Corinth, and Megara fueled the Peloponnesian Wars. However, the accounting problem was certainly a contributing factor that, according to Plutarch, incited the Athenians under Pericles to war with Sparta. Pericles misappropriation of treasury funds and subsequent actions helped initiate the second Peloponnesian War and the resulting decline of Greece.

GENERAL ACCOUNTING

Governmental accounting wasn't the only system operating in Greece during these periods. Mercantile accounting developed with the rise of the merchant class. To control and keep track of their trade transactions, Greek merchants initially utilized an accounting system based on the species of a trade item. That is, accounts were not kept in currency values but in species they represented. For example, a wheat account would be recorded in bushels of wheat rather than drachmas or some other monetary unit of currency (Webster, 1973).

Scribes often used wax tablets to record accounts. More affluent merchants might use papyrus, first introduced with imported grain from Egypt. However, both of these recording mediums were subject to rapid deterioration and few records remain. On the other hand, price inscriptions on storage jars were common and have survived, though they have proved difficult to interpret (Webster, 1973).

Merchants created accounting records not only for counting inventories and calculating profits, but also to satisfy government regulators and inspectors (Murray, 1988). A government regulated important trade goods such as corn and wine, and monitored compliance with the regulations. As Murray notes, "The corn trade was strictly regulated; it was forbidden for Athenian residents to ship corn except to Piraeus; there were laws preventing the re-export or stockpiling of corn, and special officials to regulate the market (p. 213)." Wine was also a commodity controlled by law. Fornara (1977) translated the following from a late fifth century B.C.E. inscription (words in parentheses added).

> *Neither sweet wine nor (ordinary) wine from the crop on the vines shall be bought before the first Plynterion (the meeting of a ruling body) . . . Neither out of amphorae nor out of a cask nor out of a "false-jar" shall anyone sell by the kotyle (rather than wholesale). Whenever someone does sell (by the kotyle), the form of suit and deposits and penalties are to be the same as for adulterating (wine) with water* . . . (pp. 194-5).

Such restrictions required a merchant to provide accounting documentation to demonstrate legal compliance. His inability to do so brought on fines and penalties.

Besides commodities, citizens kept records of the labor output of their slaves. Slave ownership was common (Blümner & Zimmern, 2007) and large estates required a good many slaves to keep it up. Slaves were assets, and control over these assets to ensure productivity was essential for their owner's and the city-state's prosperity. Indeed, trade and the slave labor that made it possible were key factors that enabled Athens to become an empire (Davies, 1978).

Wealth from trade and slavery created evolutionary forces that changed the traditional society governed by an aristocracy. Athens developed into a complicated bureaucratic society governed by democratic ideals. If citizens were to win political arguments in front of the Athenian Assembly, they must demonstrate their honest intentions. This meant establishing a set of accounts that would withstand an audit for correctness (Davies, 1978). (However note that democracy applied only to citizens and citizens included only freeborn males: no slaves, freedmen, nor non-Athenians.)

Properly maintained merchant's accounts and governmental tax, tribute and duty accounts were required for a society to achieve a lasting prosperity and to avoid corruption that often led to the collapse of an empire. City-states such as Corinth and Ionia followed Athens' example toward prosperity. Her sister, Sparta, did not. By the middle of the fourth century Sparta's conquests, rather than trade, resulted in an influx

of gold and silver into her economy. As Frost (1971) notes, by the mid-fourth century this newfound wealth, in the absence of proper accounting controls, corrupted Spartan society.

The Athenians were not without problems, however. The government enacted decrees governing coinage and various mercantile products such as wine, to prevent marketplace corruption. Corruption arose in Athens, though, because the controls were not adequate to deal with the great prosperity. Davies (1978) concludes from Plato's dialogues, the *Laches, Meno* and the *Republic*, that though logic and mathematics dominated fourth-century thinking, the leisure class emphasized abstraction and geometry rather than accountancy (p. 112). The city-states of Greece had failed to offer their youth a necessary topic of education: accounting. The bureaucracy of Athens and other prosperous city-states demanded business officials trained in accountancy and required implementation of accounting controls necessary to safeguard assets of the state and its merchants. But the demand often went unmet.

CONCLUSION

What are we to learn from this short discussion of accounting developments in Archaic and Classical Greece? First, it took a stable government, a government that encouraged trade, for Greek societies to flourish. The Athenians developed such a government while Sparta's militaristic rulers discouraged trade. In the end, Athens proved the more successful society of the two. Second, extensive trade created a need for accounting systems to document merchandise exchanged and tally inventories stored. Accounting systems developed in response to the need and citizens were taught how to use them. Unfortunately, events proved that not enough people were trained in the accounting methods. Third, whether to protect trading activities or divert criticism over mishandled funds, Athens' Princeps, Pericles, sought war with its neighbors. The second Peloponnesian War drained resources from the combatants and contributed to their eventual decline. Fourth, as Athenian society prospered, corruption arose due, in part, to the lack of proper accounting controls. Without the necessary controls and trained individuals to utilize them, the assets of the state and its merchants became at risk.

As the fourth century B.C.E. waned and Classical Greece began to lose its dominance in world events, it could hear echoes of distant footsteps. Alexander was coming.

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